

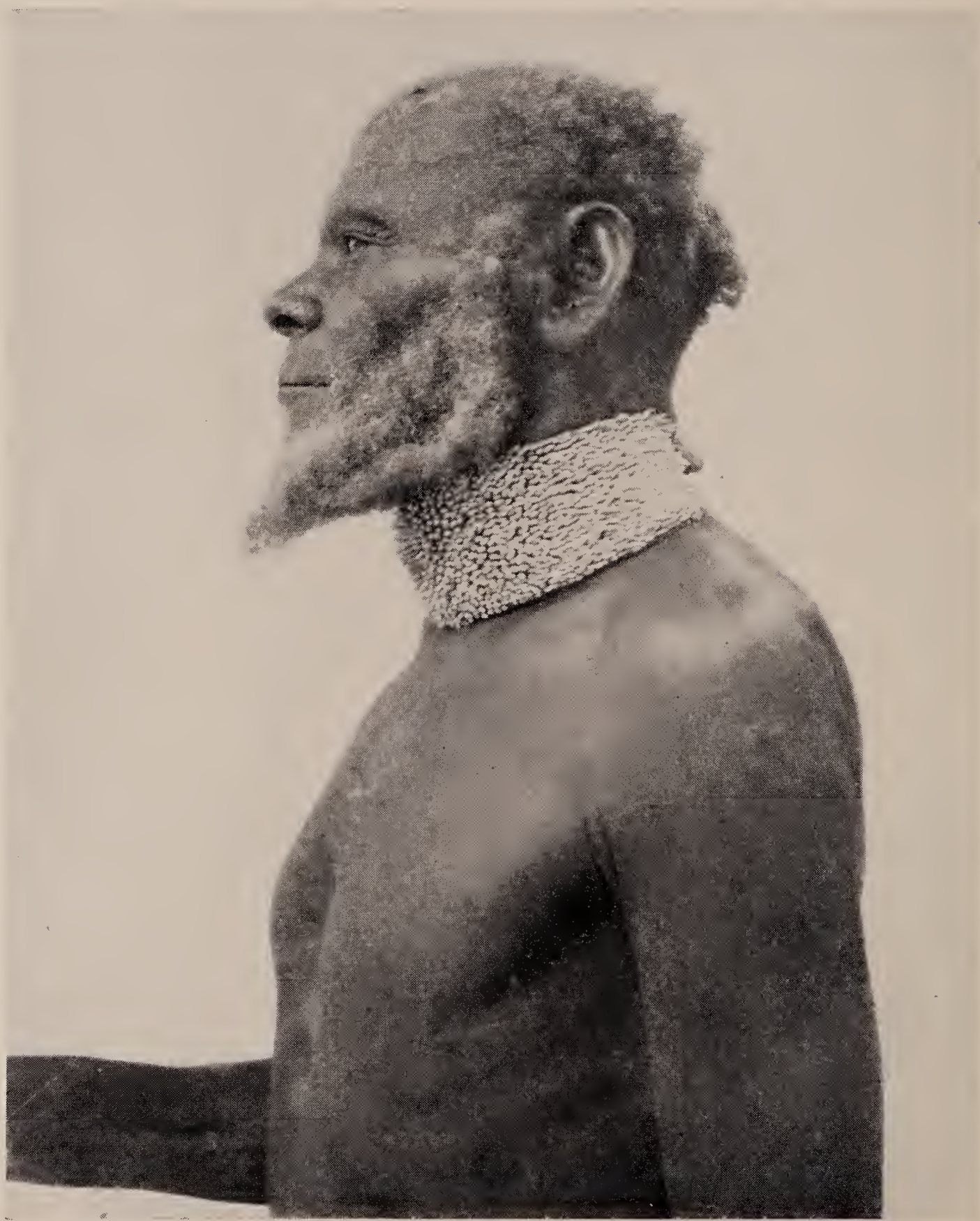
PEOPLE *of the* SOUTH PACIFIC



CHICAGO NATURAL HISTORY MUSEUM

The Melanesians

People of the South Pacific



Man from New Britain

The Melanesians

People of the South Pacific

BY

ALBERT B. LEWIS

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CHICAGO NATURAL HISTORY MUSEUM

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Foreword

Continued requests for the Museum's publication on the peoples of Melanesia by the late Albert B. Lewis have resulted in a third printing of this popular small book.

In the thirty-eight years since Dr. Lewis conducted his field work in Melanesia, many changes have occurred in native life. In numerous cases, the people today are very different from those portrayed in the book. At the same time, a large amount of new knowledge about Melanesia has been published. In the light of the changes that have taken place and of more recent anthropological work, a substantial revision of the text appears desirable. Yet such revision would completely alter Dr. Lewis' readable and pleasing style, and would destroy the flavor that his first-hand observation of native life imparts to the volume. Through the years his book, originally written as an aid to understanding the Museum collections, has acquired a value of its own as a historical document on Melanesia. We have therefore decided to reprint the text unaltered, as it provides a picture of native Melanesian life, written by a trained observer equipped with the anthropological techniques and interests of his period, who had an intimate personal acquaintance with the area and people he describes.

Dr. Wilfred D. Hambly of our staff has added an appendix containing new data in physical anthropology that illuminate racial problems in Melanesia and that complement the researches of Dr. Lewis. The selected bibliography has been compiled by Dr. Alexander Spoehr, Curator of Oceanic Ethnology.

PAUL S. MARTIN

Chief Curator

Department of Anthropology

September, 1951

Preface

During the years 1909-13 I visited, as leader of the Joseph N. Field South Pacific Expedition, the more important islands and island groups of Melanesia. Nearly two years were spent on the mainland of New Guinea, most of the time along the coast. Also, the Sepik River was ascended to a region where the natives at that time were still ignorant of iron. This report is based on my own observations as well as on a careful study of the literature. All the illustrations are either from my own field negatives or of objects now in the Museum.

As the purpose of this report is to give a general and popular account of the region and its native inhabitants, it is impossible to go into much detail or discuss the many controversial questions which have centered about this region. Where so little is known regarding so many areas and subjects, and where the territory is so large and varied, it is very difficult to make general statements to which exception cannot be taken. I have tried to make this clear in the text.

ALBERT B. LEWIS

January, 1932

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A ceremonial procession at Awar,
a New Guinea village on Hansa Bay.



Introduction

Geography of Pacific Islands

The islands of the southern Pacific Ocean are divided into three main groups: Polynesia, Micronesia, and Melanesia. The basis of this classification lies partly in their physical characteristics and general location, but the distinguishing feature is found in the inhabitants. Thus, Fiji might well be put in Polynesia from the geographical standpoint, but the language and character of its inhabitants place it in Melanesia, while culturally it is intermediate. Geographical position cannot be disregarded entirely, however, and within or near the large Melanesian groups there are many small islands that are inhabited by Polynesian or Micronesian peoples.

Physique of Peoples

These three groups of peoples are different in general appearance, culture, and language. The Polynesians and Micronesians are tall and light in color, with straight or slightly curly hair; they form two fairly uniform and closely related groups, both physically and linguistically. In many ways they resemble Europeans, and are often grouped with them as members of the Caucasian or white race, though the Micronesians show certain affinities with the peoples of southeastern Asia.

The Melanesians, on the other hand, are light chocolate to sooty black in color, with closely curled or frizzy hair. They resemble in many respects the natives of Africa, but they show great variation in size, shape of head and face, and even in color and character of the hair. They

are usually divided into two main groups: the Papuans, comprising most of the natives of New Guinea, and the Melanesians proper, inhabiting the remainder of New Guinea and the other islands of Melanesia. This division is more valid from the linguistic standpoint than from that of physical type, which varies greatly in both linguistic groups but overlaps in many ways, so that neither linguistic group can be definitely marked off physically from the other. The Melanesian languages, while very numerous and often differing greatly from one another, still show a family relationship. The Papuan or non-Melanesian languages, however, are both so exceedingly numerous and so strikingly different as to resist all attempts to classify them together. Also, non-Melanesian languages are found not only in New Guinea, but also in New Britain, the Solomon Islands, and the New Hebrides, but only in remote and more or less inaccessible interior mountain regions.

All this confusion of type and language must be due to historical causes. Unfortunately, these peoples have no history or even traditions which throw much light on the subject. From linguistic relationships and ethnographical parallels, attempts have been made to discover the main historic facts, and especially the more recent movements and migrations of peoples, which must have taken place in the past. It is unnecessary to go into the details of these theories here, but certain general conclusions seem fairly evident.

Migrations and Mixture of Peoples

Ages ago this area was inhabited by a dark, frizzy-haired people, related to the Negroes of Africa and probably connected with them by intermediate groups in the East Indies and southern Asia. As time went on, other peoples pushed into the region from eastern and southern Asia, doubtless by way of the Malay Archipelago. This influx probably took place gradually and intermittently.



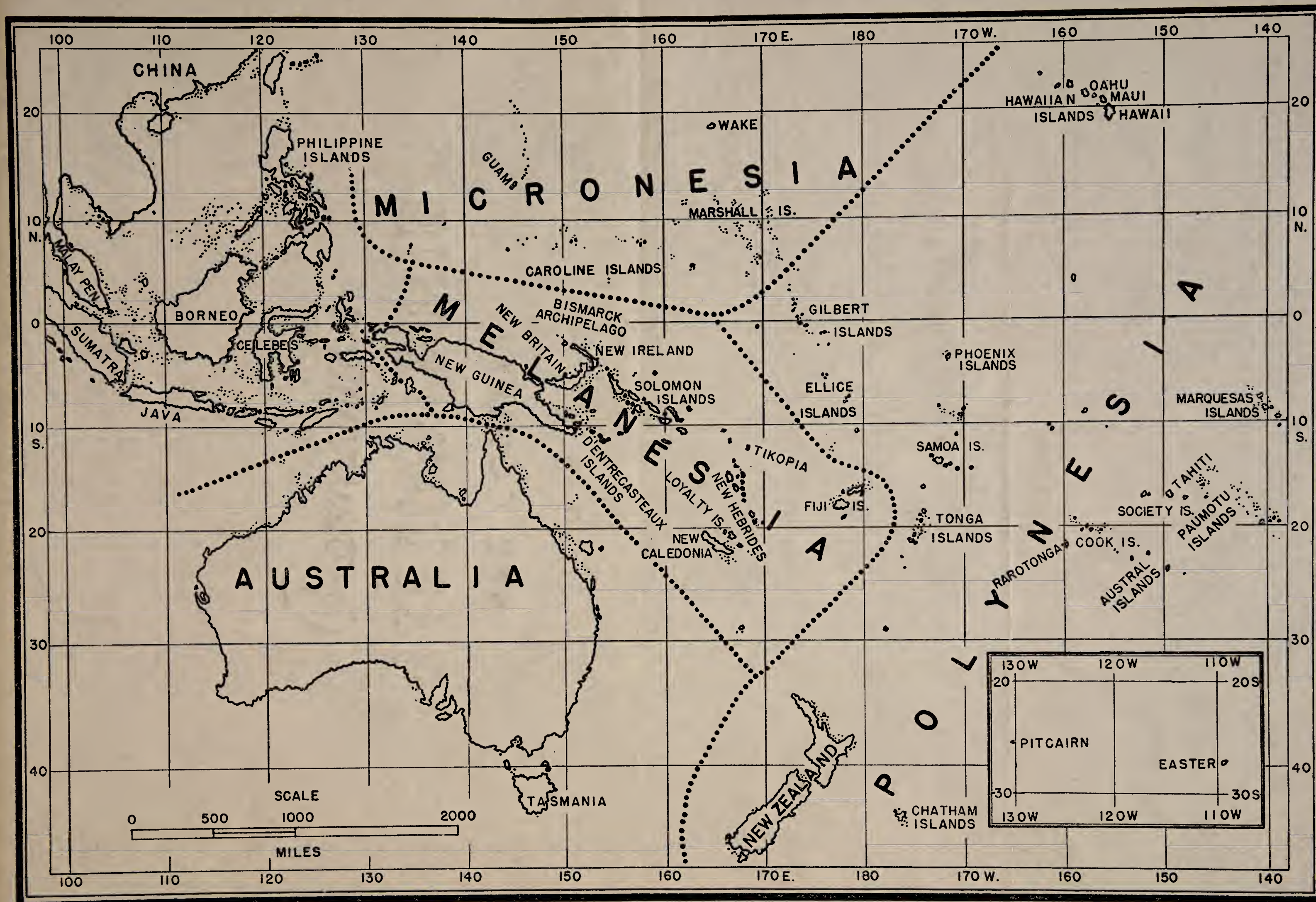
Courtesy of the *Geographical Review*, published

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Courtesy of the *Geographical Review*, published by the American Geographical Society of New York

Map 1. Islands in the South Pacific



Continents of the Pacific Ocean, showing the Pacific Ocean, the Gulf of Mexico, the Caribbean Sea, and the Pacific Islands.

In some places, the newcomers intermarried with the original inhabitants; in others, these were driven out or exterminated. The invaders of the Melanesian area were doubtless already very much mixed but they spoke languages related to the Malayan and probably resembled the older or proto-Malayans in appearance. I have seen natives of New Guinea of the Melanesian group whose facial appearance suggested much more strongly, for example, the Dyaks of Borneo than the common Papuan type. The newcomers settled in many places in New Guinea and other large island groups to the east, and in course of time were more or less absorbed in the aboriginal dark population. As a superior people, however, they imposed their language and culture on the resulting mixture, the present Melanesian peoples. The considerable variation in the physical appearance of the Melanesians, some being light in color with wavy hair (as in the eastern Solomons), can be explained by the relative percentage of the invaders in that region. This variation, together with the fact that the aboriginal languages probably differed greatly, as the Papuan languages of New Guinea do today, explains the great differences in the Melanesian languages of the present time, as the original native, non-Melanesian language would have had more or less influence on the language of the descendants of the newcomers, if these mixed or intermarried to any great extent with the native population. In a few places, as before mentioned, the original population was so little affected that it retained its old language, though modified by Melanesian contact. A few languages are so mixed in character that it is difficult to place them.

Languages

Languages, however, do not mix as readily as peoples and cultures, so it is usually easy to divide the population on this basis. While there were all degrees of mixture of blood and culture, the language usually became either

that of the invaders, i.e., Melanesian, or it retained its old grammatical form. The new language may have been taken over from the invaders, even though their numbers were few and the effect on the physical type of the population was slight. Physically, some Melanesian-speaking peoples, as in the western Solomons, are very dark, with kinky hair and Negroid features, probably much nearer the aboriginal type than some New Guinea Papuan-speaking tribes, which frequently are indistinguishable in appearance from neighboring tribes with Melanesian languages. The culture of these tribes—their customs, habits, beliefs, and manner of life—also shows no such sharp distinction as the languages. This is especially noticeable on the north coast of New Guinea, where Melanesian and Papuan languages frequently alternate along the coast. On the south coast, however, the line is rather sharply drawn between the Papuan tribes on the west and the Papua-Melanesians (as the New Guinea tribes speaking Melanesian languages have been called) on the east. This is undoubtedly explained, in part at least, by the fact that the peoples along this border line have been in contact only a short time. Recent tribal movements known to have taken place, as well as the traditions of the tribes themselves, show this contact to be a recent one.

Pygmies

Whether this black, kinky-haired people represents the first inhabitants of Melanesia is not certain. Some scientists have supposed that the first inhabitants were pygmies, as dwarf or pygmy peoples are found in several places in New Guinea, as well as in other islands. The pygmies are always found in the most inaccessible parts of the mountainous interior, and this fact has led to the supposition that this dwarf condition was due to the long-continued action of unfavorable conditions. There are many species of animals that are known to have descended

from larger forms, and to have acquired their present degenerate condition through the influence of unfavorable surroundings. The dwarf or pygmy characteristics would become fixed through a long series of generations, just as in the animal groups. There is considerable evidence to show that some of these dwarf peoples, at least, show a tendency to larger growth under more favorable conditions.

There is, however, another theory to the effect that Africa, New Guinea, and probably the islands to the east as well as those to the west as far as southern Asia, were formerly inhabited by an early pygmy race, possibly the real first inhabitants. Remnants of this race are found in the Andaman Islanders, the Sakai of the Malay Peninsula, the Negritos of the Philippines, and the New Guinea pygmies, while some anthropologists claim to have found traces of it in the populations of many different regions. Scientists have not yet decided the merits of the rival theories of race and environment as producers of pygmy forms.

While the Melanesians as a whole average considerably smaller than Europeans, there is great variation in size; a few, such as the Fijians and some of the Papuans of the south coast of New Guinea, are at least as large as the average European. Sixteen men of Merauke averaged five feet six inches; sixteen Motu-motu averaged five feet seven inches. The coast people are usually larger than those of the interior, especially those of rough or mountainous regions.

Mention has been made of the fact that certain small islands within the Melanesian area are inhabited by Micronesians or Polynesians. This occupation is probably fairly recent and due partly to accidental causes. We know of many cases in the Pacific where single canoes, or even several together, have been carried by storms and ocean currents to far distant shores. When the landing occurred on large islands, the newcomers were

nearly always killed by the inhabitants as enemies. On small islands, however, where the people were few, or perhaps absent, they had a better chance of surviving. Even on some larger islands there is evidence of recent Micronesian or Polynesian influence and admixture. This is especially true in Fiji, where the leeward islands are almost entirely occupied by Polynesians from Tonga, who had moved in there in very recent times and were extending their conquests to other parts of Fiji when European influence put a stop to intertribal wars.

It is not unlikely that in Fiji there was also an earlier mixture of Polynesians, some of whom may have stopped there during the early period of Polynesian migrations. The same may be true in other Melanesian islands, and an attempt has been made to trace the line of Polynesian migration from eastern Asia by the occurrence in certain places of linguistic or cultural features that are claimed to be of Polynesian origin and to have been acquired by the native inhabitants during the temporary stay of the Polynesians in those regions. The whole subject is one that needs further investigation before definite conclusions can be reached [see p. 228].

All this goes to show that the population of these islands has not been the same from time immemorial, but that various movements and migrations of peoples, with resulting mixtures of all sorts, have taken place here, as well as in other parts of the world.

What Is Culture?

The culture of every people is the result of two factors, inheritance and environment. These peoples coming into the Melanesian islands brought with them certain customs and habits, which together make up what is called their culture. These habits and customs were subject to new influences—of other peoples, if there were any, with whom they came in contact, and of the physical and geographical surroundings in which they found themselves. What the

original culture of the early inhabitants was, or what that of the various incoming migrants may have been, we can only infer from the present condition, or from the early accounts of the first European visitors. Endeavors have been made to assign certain elements of culture to succeeding waves of migration, but the results of this method are hypothetical and debatable. Further study, especially of the languages and archaeology, may lead to more definite conclusions.

E n v i r o n m e n t

The physical or geographical surroundings in which these people found themselves, however, doubtless also had their influence. For example, people cannot raise things that will not grow where they live, nor can they use materials not found in that region. Before taking up the culture in detail, then, the geography and natural resources of this region should be briefly discussed.

Geography, Climate, and Products

Geography of Melanesia

The Melanesian islands lie within the tropics south of the equator, and by far the larger portion, including nearly all of New Guinea, between the equator and 10° S. Lat. The principal groups are Fiji, New Caledonia and the Loyalty Islands, New Hebrides, Santa Cruz, the Solomon Islands, the Bismarck Archipelago (including the Admiralty Islands), and New Guinea with the small islands associated with it. The general trend of the groups, as well as of most of the larger islands, is in a northwest-southeast direction, as if they formed the upper part of an extensive mountain system, the base of which had sunk beneath the sea.

Volcanoes

The islands in general correspond also to this character, as most of them are exceedingly rough and mountainous. In Fiji the ranges are from 3,000 to 4,000 feet high; in New Caledonia some are 5,000 feet; in the Solomon Islands they rise from 8,000 to 10,000 feet; while in New Guinea the highest peaks are over 15,000 feet in altitude and covered with snow and ice. Ancient volcanic rocks predominate, and volcanic action is still going on. There are a number of active volcanoes, while thermal springs are found in many places. In the New Hebrides, for example, there are three active volcanoes: on Tanna, Ambrym, and the small island of Lopevi, which is an almost perfect cinder cone, 4,714 feet in height. In December, 1913, there was a violent eruption on Ambrym,



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Map 2. New Guinea and the Bismarck Archipelago



and at this time many native villages and one important mission station and hospital were destroyed.

New Britain is another center of volcanic activity. Blanche Bay, the chief harbor on the north end, is an old volcanic crater, one side of which has been broken down or blown away. Several years ago, the water of the bay got so hot as to kill great quantities of fish and turtles, which were washed up on the beach, and a new island was formed in the bay. Earthquakes are common in many places and while the native houses are not easily injured by any ordinary quake, I have seen in New Guinea at least one large village that was totally destroyed by having the land on which it stood sunk from six to twelve feet below sea level, so that only the roofs of some of the houses remained above water.

Size of Islands

Though the islands of Micronesia and Polynesia, aside from New Zealand, are small, many of the Melanesian islands are quite large, several being over 100 miles in length, while New Guinea is the largest island on the globe, being nearly 1,500 miles long and over 400 miles wide in the widest place. The total extent of Melanesia, from Fiji to the northwestern end of New Guinea, is about 3,500 miles. The area of the different groups is approximately as follows:

	Square miles
Fiji.....	7,000
New Caledonia.....	6,450
Loyalty Islands.....	1,050
New Hebrides.....	5,100
Santa Cruz.....	380
Solomon Islands.....	17,000
Bismarck Archipelago.....	20,000
New Guinea.....	300,000

Climate

These islands lie within the tropics, and the temperature is very uniform. Except during the period of calms

ocean winds blow almost every day, while at night, in the larger islands and especially in New Guinea, there is a cool breeze from the interior highlands. The average daily temperature, except in the more southern islands (Fiji and New Caledonia), varies less than 10° F. while the difference between day and night seldom exceeds 15°. The maximum temperature in Fiji is about 90°, in New Guinea 90 to 95°, and in the Solomons sometimes as much as 98 to 100°, but this is only during the period of calms, when there is no wind and the air over the land rapidly becomes heated. This heating of the air is of course true of any place subject to the almost vertical rays of the sun, when the cooling sea breeze is cut off.

These temperatures are not high, and one usually feels perfectly comfortable in the shade, especially if there is a breeze blowing. A strong wind often seems chilly. During four years spent in the islands, the only place where I was really uncomfortably warm in the shade was in the Solomons during the period at the change of the monsoons, when the air was saturated with moisture and there was little breeze. Then I was wet with perspiration as soon as I got out of the breeze. At night I nearly always slept under a woollen blanket. In Fiji and New Caledonia during the cool season I have shivered at night in all my clothes with my raincoat and a heavy steamer rug wrapped around me. Of course, in all the islands the temperature decreases as one goes up into the mountains. The lower parts of the ranges are often inhabited up to a few thousand feet, but the lowland natives suffer from the cold if taken as much as 3,000 feet above their home.

Health of Natives

The healthfulness of the islands varies with the latitude and the altitude. In the southern groups, Fiji, New Caledonia, and the Loyalty Islands, fevers are almost unknown; and while the continued warm and even temperature is enervating to Europeans, the climate is not

otherwise injurious. In the other groups, however, fevers are common, even among the natives. Besides these, the principal native diseases are stomach and bowel complaints, dysentery, colds and their complications, skin diseases, and sores and ulcers of a malignant type. With the advent of Europeans, other much more dangerous diseases have been introduced and in some places have nearly wiped out the native population. For Europeans, the greatest danger comes from fever and its complications. Ordinary malarial fever can usually be kept down by quinine, but there are others that are not so easily controlled, and there is much still to be learned about tropical fevers. By special care in respect to food, dysentery, stomach and liver troubles can usually be avoided, and by prompt attention to any skin abrasion or infection there is little danger of sores or ulcers.

Rainfall

The rainfall varies greatly in different parts of Melanesia, though in general the heaviest rains fall during the months from December to April inclusive, during the northwest monsoon. There are some exceptions, due to the position of the mountain ranges relative to the direction of the prevailing winds. The rain, of course, falls most heavily on the windward side of the islands, especially if they are mountainous, in which case there is a definite rainy and dry season. In low islands the rainfall is more evenly distributed.

The rainfall is usually heavy, especially on the slopes of the ranges facing the prevailing winds. In other places the rainfall may be light, as on the west side of Fiji, the south end of New Caledonia, or the south side of New Guinea around Port Moresby. In these places the rainfall is not sufficient to support a forest, and we find an open grassland or bush country.

During the day, except during the period of calms at the change of the monsoons, there is almost always a

breeze, and frequently a strong wind, especially on windward shores. On the north coast of New Guinea, for example, during the northwest monsoon, which is the rainy season in this region, the wind is so strong and the sea so high that landing on any exposed beach is impossible; and, as good harbors are scarce, many stations are cut off for several months from all communication with the main port. Though the winds are strong, they are not sufficiently so to be dangerous, at least on land. This lasts but a few months, however, and during the rest of the year there is usually a fair sea breeze during the day and a cool land breeze at night blowing in the opposite direction. The same is true in most of the larger islands; and, throughout nearly all of Melanesia, there is a tendency for the sea breeze, at least during the southeast monsoon, to die down at night, even if not replaced by a land breeze. While short squalls are common and often dangerous, hurricanes do not occur within less than 10° of the equator, though fairly frequent in Fiji and the New Hebrides.

Vegetation

As a rule, the islands are covered with a dense, heavy tropical forest, with here and there an opening where the natives have made clearings for their villages and gardens. Open grassland is frequently found in the valleys and on the hillsides, especially in parts of New Guinea. This grass is often nearly as high or higher than one's head, and the country is anything but pleasant to travel through, as the grass cuts off the breeze but does not in the least protect one from the broiling sun.

This grass is useless to the natives, except in a few regions where it is used to thatch their huts, and they usually burn it during the dry season. This is often done in connection with a grand hunt for kangaroos or other animals, but at other times there is apparently no reason but the desire to see a big blaze. While traveling

in New Caledonia through such a country with some natives, one or two of them would often stop behind and start a fire just for the fun of it, and one time we nearly got caught by the fire, which came our way faster than they had expected.

The forest furnishes many things of importance to the natives: timber for his huts, canoes, weapons, and wooden utensils; palm leaves for mats and thatch; rattan and tough vines for binding; bark to be shredded for string, or beaten out into sheets for clothing; fibers of various kinds for all sorts of purposes; a few wild fruits and nuts, such as the wild breadfruit and the *Canarium* nut; and, in the swampy lowlands, sago from various species of sago palm. Many succulent plants are also used as greens, but, aside from sago, most of the native food is obtained from cultivated plants.

Wild Animals

There are no very large wild animals in Melanesia. The largest are wild pigs, in most cases introduced for the first time by Europeans, then transported from one island to another by the Melanesians themselves. The wild pigs of New Guinea are usually classed as a separate species, sometimes two, but they are closely allied to some species in the Malayan islands, and there is a question as to how they reached New Guinea. These wild pigs are found in most of the larger islands and are a great nuisance, as they destroy the native gardens. They are, of course, hunted by the inhabitants but are usually too wary to be caught.

The only other mammals found on the islands of the outer archipelagoes are mice, rats, and bats, but in New Guinea and neighboring islands there are marsupials, including several species of small kangaroos and phalangers, together with a small number of native rodents and the remarkable egg-laying spiny anteater.

Birds are numerous, especially in New Guinea, which is the home of the birds of paradise. Here also is found

the cassowary, a bird similar to the ostrich but smaller and more heavily built. Aside from furnishing food, the feathers of this bird are prized for ornaments, and the legbones are used in the making of daggers and knives. In all there are over 400 species of birds in New Guinea, including many kingfishers, parrots, and pigeons with brilliant plumage, much valued by the natives for ornaments, especially head-dresses. The larger pigeons and some of the water fowl are the principal game birds.

The largest and most dangerous animal in this region is the crocodile, which will occasionally even come into the villages and seize people at night. There are also several lizards, including the large monitors, whose skin is used extensively for drum-heads. Several kinds of snakes, both harmless and poisonous, are also found. These reptiles occur in New Guinea and the neighboring islands, but are mostly lacking in the southeastern groups.

In general it may be stated that the number and variety of plants and animals decrease rapidly as one proceeds eastward from New Guinea, and that the southeastern groups, Fiji and New Caledonia, represent the last outposts of continental animals.

While there are not many animals on land that are of importance to the natives, the rivers, lagoons, and sea-shores with their coral reefs furnish an important portion of the food of those tribes living in their neighborhood. Not only are there fish, crustaceans, shellfish, and lower forms in great abundance and variety, but turtles are frequently caught and are especially prized, not only for food but also for their shells. In Torres Strait and in the Solomons dugongs are sometimes speared, and the capture of one of them is an occasion of great rejoicing.

History

European Exploration and Trade

Although the north coast of New Guinea was partially explored by the Spanish and Portuguese about 1526, the Solomon Islands discovered by Mendaña in 1567, and the New Hebrides by Quiros in 1606, almost nothing was known of the islands until the latter part of the eighteenth century. At that time the extensive ocean voyages of Bougainville, who visited New Guinea, the Bismarck Archipelago, and the western Solomons in 1768; of Captain James Cook, who visited and named the New Hebrides, and discovered New Caledonia in 1774; of d'Entrecasteaux, who explored the islands near the eastern coast of New Guinea, part of the Solomons, and New Caledonia in 1793; and of others, who came after them, made known the position of most of the Melanesian islands. More detailed exploration came at a later date. Fiji was first carefully charted by the United States Exploring Expedition in 1840 and the north coast of New Guinea was first followed by Otto Finsch in 1882; but extensive stretches of the coasts of a number of the islands are still uncharted.

During the early part of the nineteenth century traders began to visit and settle in the southern islands, especially Fiji. Here sandalwood was discovered about 1804, and soon numerous small vessels were engaged in the sandalwood trade, not only with Fiji, but also with New Caledonia and the New Hebrides.

Sandalwood was at first the most important article of trade, but trepang,¹ tortoise shell, pearl shell, and copra

¹ Dried sea-cucumbers or holothurians, much prized by the Chinese for soup.

(dried coconut meat) were also sought, and, as the sandalwood became exhausted, they gradually became more important objects of trade. Trade was also gradually extended to the more northern and tropical islands, but the natives were more or less hostile, and trade did not flourish until some degree of order was established by European governments. The natives raise great numbers of coconut trees, and the trade in copra soon became predominant. At the present time so far as trade with the natives is concerned, copra is by far the most important object. Aside from Fiji and New Caledonia, where native products have come to occupy a very small place compared with those of European settlers, copra is the chief export of all the Melanesian islands, although, as the number of settlers increases, other tropical products are becoming increasingly important.

The first white men who settled in these islands were probably shipwrecked seamen or deserters. In 1808 certain sailors were shipwrecked on Fiji, among them the famous Charles Savage, who, with his musket, was an important factor in Fijian wars for several years.

All too frequently the early settlers were men of questionable character, and many of the traders were unscrupulous in dealing with the natives. This led to trouble, and many white men were killed in retaliation. As a better class of traders and settlers came in, however, things gradually improved in the southern islands, especially Fiji.

The development of plantations in Fiji and New Caledonia, as well as in Queensland, led to further trouble with the natives of the New Hebrides and the Solomon Islands. These regions served as a recruiting ground for labor from about 1847 until the recruiting was finally stopped in 1904. While no native was supposed to be taken without his consent, there was a great deal of kidnapping, and the natives were often treated like slaves. Of course they retaliated, and missionaries and traders,

as well as "black-birders," as the recruiters were called, were killed. Attempts were made to regulate the labor traffic, but it was finally stopped by prohibiting the importation of all natives to Australia and to Fiji from other islands. The labor shortage in Fiji was solved by introducing Hindu coolies. The French still recruit labor for New Caledonia in the New Hebrides, but otherwise no native is allowed to go to another group of islands to work. Recruiting still furnishes most of the labor on the plantations, but it is strictly regulated, and while the native recruits are working they remain under the protection of their own government.

The facts above mentioned made necessary the establishment in the islands of some sort of government that could control the unscrupulous white element. After a long period of trouble and unrest, Fiji, by the general consent of both natives and Whites, was ceded to Great Britain in 1874, and was created a Crown Colony, while the governor was also made the British High Commissioner for the Pacific, with power to judge all cases relating to English subjects in that region.

New Caledonia was annexed by France in 1853, was made a penal colony in 1864, and continued to receive exiled convicts until 1898.

The New Hebrides have been a bone of contention between the French and English, or rather the Australians, for many years. At first there was no restraint on the acts of selfish and unscrupulous Europeans. An attempt was made to control affairs in 1887 by a joint commission of naval officers, and a joint government was organized in 1906, but it has not been a great success, and the natives in the New Hebrides are not as well protected as elsewhere.

The eastern Solomon Islands were annexed by Great Britain in 1893, and in 1899 the boundary was definitely delineated between the British and German islands, Germany having annexed the western Solomons, the Bismarck Archipelago, and northeast New Guinea in 1884.

Southeast New Guinea (officially named Papua) was annexed by Great Britain in the same year (1884). At first it was administered by Queensland, but later came under the general Australian government. In 1920, Australia also received the mandate for German New Guinea, a region that had been held by her under military control since 1914.

The western part of New Guinea has been claimed by Holland ever since she assumed suzerainty over the Malay sultans of the Moluccas, who had earlier extended their influence, if not their authority, to the adjacent coasts of New Guinea. The extent of the Dutch claims was somewhat indefinite until Germany and Great Britain had annexed the eastern part of the island. The boundary was finally recognized as 141° E. Long., except for a small distance on the south side. In 1893, for practical reasons, it was agreed between the Dutch and the English that the boundary should start on the south shore in the middle of the mouth of the Bensbach River, 141° 48' E. Long., run due north to the Fly River, and follow the Fly to the 141st meridian.

Christian Missions

One factor that had a very decided influence on the course of events in Melanesia was the presence of the missionaries. As was the case with traders and settlers, Fiji was the first group to be occupied by missionaries (about 1835). Considerably later, missions were established in the more northern islands, and in 1872 work was begun on the south side of New Guinea. The work of the missions developed rather slowly at first, but more rapidly later. At present there is hardly an island of any size without one or more mission stations. The missionaries have always stood between the natives and unjust aggression on the part of certain European elements, and have usually tried to help the natives adjust themselves to conditions arising from contact with a higher and more

aggressive civilization, which often showed the natives little or no mercy. This adjustment must take place, or the natives perish from the earth, as many have already done. The change in native life, which many deplore, and which is not always for the natives' good, is bound to come, on contact with Europeans, and the missionaries are not the worst representatives of European civilization. Missionaries have been criticized for many things, and often justly, but the general results of their work, from a practical standpoint, have met with the decided approval of the best and most experienced administrators of these regions, such as Governors McGregor and Murray of British New Guinea and Governor Hahl of the former German territory.

Recent Changes in Fiji

All these influences, which have been acting on the native inhabitants of Melanesia for the last hundred years, or considerably less in most of the islands, have brought about decided changes. Aside from the unexplored parts of the interior of New Guinea, there are few places where the natives have not been more or less modified by European culture, and in some places the old primitive conditions have almost entirely disappeared. This is especially true of some of the smaller islands, where even the people themselves are almost extinct. In the larger islands and groups the effect has not been so noticeable. Fiji, the first of the Melanesian groups to come under European influence, has been in many respects the most modified. At present the whole native population is, at least nominally, Christian. In almost every village there is a church which also serves as schoolhouse during the week, the native pastor usually acting as schoolteacher. Almost every native can read and write his own language. There are higher schools and even a college, to which natives can go for higher education. Many books and several papers are published in Fijian. The educational work is

almost entirely due to the missions, both Protestant (Australian Wesleyan) and Catholic, and the government has given some assistance in recent years. The training is not all or even chiefly book work, but a great amount of training is given in industrial and practical subjects. An endeavor has been made to build up rather than destroy native industries.

In spite of all this effort, the native Fijians, from the European standpoint, are lazy. They work no more than they must in order to get the small amount of food and clothing they require. They refuse to work for white men, especially on the sugar plantations. As they have been recognized as owners of most of the land, they easily raise money by leasing or selling land to Europeans or Hindus. They raise most of their food in the old way and sell a certain amount, especially bananas and other fruits. Their houses and villages are built much as in old times, but more crudely constructed.

The clothing of the Fijians, except in remote districts, is made of European cloth. The women usually wear a loose gown, while the men sometimes wear trousers with or without a shirt, but usually only a *lava-lava* or loin cloth, made of about two yards of plain or printed calico wrapped around the waist. The better educated or higher classes are often fully dressed in European style, but even then trousers are usually omitted. It looks peculiar to see a man in nicely buttoned coat, white shirt, and cravat, and below the coat only the lower edge of a *lava-lava* and bare legs and feet. They take great care of their bushy hair, but seldom wear a hat or head-covering. No respectable Fijian will wear ragged or cast-off European clothing, as is common in New Caledonia, for example, and many other islands.

They still make a few common earthen pots and crude wooden vessels, mats, baskets, and fish traps. A good deal of tapa or bark cloth is made, but not in such amounts or variety as formerly. Except for a few heirlooms, and a

few modern cheap imitations, their clubs, spears, and weapons are all gone. The same is true of all the old ceremonial material, and their best and most artistic work in all lines. They still make and use, however, most of the articles of everyday life used in former times, and a native village is still an interesting place to visit. The villages are scattered over the islands, but not in the neighborhood of European or Hindu settlements or plantations. They despise the Hindu coolie, who treats them with equal scorn.

There are about 85,000 Fijians at present. Fifty years ago there were double that number. The decrease is not entirely due to disease. There are several reasons, but apparently one of the most important, though rather intangible, is a lack of any real interest in life, or in what the future holds for them as a people. Hence there are little desire for children and an unwillingness to be troubled with them or with anything else that demands effort.

The exports of Fiji are of considerable importance commercially, sugar holding the first place. Over 60,000 Hindu coolies have been imported to work the sugar plantations. Great quantities of bananas are shipped regularly to the Australian market. Many of these are raised by the natives. Copra is also an important article of export, the coconut plantations being chiefly on the smaller islands.

Altogether there are nearly 4,000 Europeans, chiefly English, in Fiji. Suva, the capital and chief port, has a population of about 2,000, and is well supplied with stores, hotels, banks, and even a Carnegie Library. Fijian is spoken by all the Europeans having dealings with the natives. Few Fijians speak English.

Recent Changes in New Caledonia

In New Caledonia the French have had considerable trouble with the natives, and two organized rebellions have

had to be put down. At present the native population is mostly confined to reservations, being in much the same state as the North American Indians. While missionaries have worked among them for years, many still retain their old beliefs. Their material culture and mode of life have been more extensively modified than in Fiji. In the Loyalty Islands conditions more nearly resemble those in Fiji. The total population of New Caledonia is nearly 50,000, about 28,000 being natives. A considerable number of the remainder are released prisoners and exiled criminals from France, whose influence on the natives has not been the best. The New Caledonians seldom work for white men, and produce very little beyond what they need for themselves.

Recent Changes in New Hebrides

In the New Hebrides conditions vary. The southern islands have been largely Christianized, and have lost nearly all of their old culture. In the large northern islands the interior tribes are still wild and primitive. The total native population is estimated at about 55,000 to 60,000, while there are about 1,000 Europeans, including government officials, missionaries, traders, and planters. The plantations are not numerous, and were formerly limited to coconuts, though cotton and cacao are now being cultivated. Native labor is hard to get, so the French are importing Indo-Chinese help, which gives them an advantage over the English. The natives prefer to raise and sell the copra themselves, and often accumulate in this way a considerable amount of money. Most of the islanders are conservative and cling to their old customs. It is interesting to see natives without a sign of European civilization about them dealing with each other in English money. I remember seeing a rather small pig change hands at six pounds sterling. At another time, when buying some things from the natives, I ran short of silver change, and a man standing by, in full native cos-

tume (which is next to nothing), offered to change as many gold sovereigns for me as I wished. I said five and he brought me one hundred shillings in silver coin.

Aside from iron tools and a few small objects, probably the chief use to which they have put their money is in buying whale-boats and small sailing vessels, as their own rather crude and small canoes are not suitable for long voyages or rough weather.

Recent Changes in Santa Cruz

The Santa Cruz group has been less visited than most of the other islands, and the inhabitants are still living much as in former times, though most of their best work and most interesting objects have been traded off for European goods.

Recent Changes in Solomon Islands

In the Solomon Islands conditions vary. Some of the islands, especially Malaita, were for a long time recruiting grounds for the Queensland sugar plantations, and many of the natives learned something of the white man's ways. Peculiar as it may seem, these former laborers are now the most active in opposing all European influences. No white man or foreigner is safe on Malaita. The younger Malaita men go in considerable numbers to work on the coconut plantations in the islands and are regarded as good and reliable workers—the best in the group; but on finishing their time and on returning home, they are as determined as any in resisting all outside interference. Their motto seems to be “Malaita for the Malaitans.” The leaders in this are the returned Queensland laborers, who are now middle-aged or older, and men of influence in their communities. These men, many of them at least, speak, not the pidgin of the islands, but excellent English, which they learned during their stay in Australia. They have evidently come to the conclusion, however, that their old way of living is to be preferred,

and about all they have taken of civilization are iron tools and firearms. There are a government station and a mission or two on the island, but these have little influence beyond their immediate vicinity. While at the government station, I was told it was unsafe to go more than half a mile away, and not that far into the bush. These Malaitans are lighter in color and less Negroid than other Melanesians; often the hair is nearly straight, and they show a large admixture of foreign blood. As before said, they are the best and most intelligent workers in the islands. Their reaction to what they have seen of our modern civilization is worthy of consideration.

The natives of the other Solomon islands are not, as a rule, hostile, though there has been considerable trouble in places. The interior of the larger islands is very little known. There are a number of mission stations in various parts of the group, and a few dozen traders and settlers. Many large coconut plantations have been started. The natives in many places, especially in the smaller islands, have lost most of their old culture, but much remains in some of the larger islands. Intertribal warfare has been largely stopped except in Malaita. The native population of the group is estimated at about 200,000.

Recent Changes in Bismarck Archipelago

In the islands of the Bismarck Archipelago the inhabitants of New Ireland and those of the northern part of New Britain are most modified. Missionaries, traders, and settlers have all had their influence, and not much is left of the old native arts and industries, though their houses and mode of life are but slightly affected. Central New Britain is unexplored, and the coast is only partially known. In the Admiralty group the natives are still cannibals and mostly uninfluenced, but the inhabitants of the smaller outlying islands have lost much of their material culture through traders. A trading station and a mission station were established there a few years ago.

Recent Changes in New Guinea

In the large island of New Guinea conditions vary greatly. Most of the coastal region, and a considerable part of the interior in British New Guinea or Papua, have been brought under the control of the government. A large part of the island, however, is still unexplored and unknown. The larger rivers, the Fly, the Sepik, the Mamberama, and some others, have been ascended as far as boats can conveniently go, but not much has been done in the far interior away from the navigable waterways. The mountain ranges have been partly explored in the eastern part of Papua, and the snow-covered ranges of the Dutch territory have been ascended from the south in two or three places. On the north side of the island, the coastal ranges have been entered or crossed in a few places, but the interior ranges are largely unknown. A few recent expeditions have used airplanes. Most of the exploration, however, has been done by government expeditions. In the English territory the discovery of gold caused many prospectors to penetrate into unknown regions, with the result that they usually got into trouble with the natives, and the government had to enter the country and establish order.

The total white population of New Guinea does not exceed 2,500 individuals, of whom about 1,500 are in Papua. Many of these are gold seekers, but there are also more traders and planters here than in other parts. Australian traders and settlers are entering the former German territories, but the total number, including government officials and missionaries, is not over a few hundred. In the Dutch territory there are probably less than a hundred Europeans, but many Chinese and Malay traders. Most of the Europeans, except the gold hunters and missionaries, are in or near the chief ports. There are outlying government stations at rather distant intervals, probably not over two dozen in all, and many mission stations are scattered along the coast and in the near-by interior.

No one knows the native population of New Guinea. It has been estimated at about 1,000,000. The densest population is found in certain places along the coast, and in some of the river valleys. Some regions appear to be very thinly populated, and often there are extensive areas where no natives are to be found. Some of these, such as mountains and swamps, are more or less unsuitable for habitation. Other areas seem to have been depopulated by warfare.

The effect of European civilization upon the natives varies greatly. In some villages many or most of them have become Christians and have adopted European clothes, implements, and even house types. Usually the effect is much slighter, and the natives live and dress in the old way, accepting only a few iron tools and other conveniences, such as small cheap mirrors and matches, from the invading civilization. The native does not always look upon the white man as a superior being, by any means, though he recognizes the value of many of his material possessions and admits the "magic power" by which he has obtained these things. Otherwise, the white man is often regarded as extremely foolish, especially when he insists on working hard day after day in the hot sun, although he already has plenty for all his needs. European trinkets do not, as a rule, appeal to these people; and while some, especially at first, will accept cloth, beads, and such things, others refuse them absolutely. In some villages situated in the immediate vicinity of trading-posts that have been established for years, hardly a sign of European clothing or ornaments can be found. Such things as beads are usually of value as trade only in out-of-the-way places where they are a novelty. Even then the more they resemble the objects used for ornaments by the natives, such as seeds, the more readily they are accepted. In New Guinea, of course, contact with Europeans has been of such short duration that there has been no time for a new generation to grow up with a somewhat different outlook on life, as in many of the other islands; so one

sees the effect of this contact with European civilization on the native himself and his reaction to it.

The natives of New Guinea trade a great deal among themselves, so they are always ready to exchange things they have for others they may desire. On first contact with the traders or any European who wishes to obtain some of the objects which they have, the natives are prone to accept what might be called curiosities. They know the use of none of these strange objects offered them, so they take what seems to them most curious and interesting. I remember trying to trade, on the upper Sepik, with a native of this kind for a bow and some arrows. He refused almost everything offered him, including a fine large knife or *machete*, but finally accepted an empty glass bottle, which seemed to interest him greatly. He undoubtedly knew nothing of iron, but farther down the river, where the natives had been in contact with Europeans before and had learned the value of iron, one could buy almost anything for a knife or a planing iron. Planing irons were especially desired, as they could readily be substituted for the stone blades of axes and adzes without modification of the handle. On the coast a certain type of ax blade that would fit on to the native handle was in much demand. As a rule the natives did not care much at first for hafted hatchets and axes, as they did not know how to make new handles when the old ones broke. Still, axes were nearly everywhere acceptable, and after considerable experience the natives became good judges of the various grades. In some places they demanded the highest grade American silver-steel ax and would refuse to take the cheaper German grades. The exceedingly hard tropical woods enabled them to recognize the different grades very quickly.

After the natives' wants in respect to iron and usable iron tools were satisfied, it was difficult to say what they would desire next, and it was necessary to know the local tastes and desires before loading up with objects for trading. Salt was often much in demand in the interior.

Tobacco and matches were nearly always wanted, as they soon use up what they get. Old newspapers were useful in some places, where the natives used the paper to roll their cigarettes. If beads were taken, one had to know the size and color in fashion at that particular place, as other kinds would usually not be accepted at any price. Vermilion and red ocher were often desired for paint.

Most of the New Guinea specimens that I collected were obtained by trading for them with axes and knives of various sizes for valuable objects; tobacco, matches, fish-hooks, etc., for smaller or less valuable objects. Money was taken only in the immediate vicinity of the chief ports. Recently, since the natives have to pay a poll tax, money is more generally in demand.

Pidgin English

In dealing with the natives, the so-called "pidgin" English is usually used, except in Fiji, as has been mentioned, and in Dutch New Guinea, where a simplified Malay, such as is used throughout all the Dutch Indies, has been introduced by the Malay traders.

Pidgin English varies considerably in the different island groups, and especially between the English and former German possessions. The vocabulary is limited to a few hundred words more or less, and the structure follows in certain respects that of the Melanesian languages. In the English territories, where the natives hear English spoken, it is more like a simplified or mongrel English, the size of the vocabulary depending on the speaker's familiarity with true English. While most of the words are English, there are a few native words, and many English words have a peculiar and special meaning.

In the German territory, however, most of the natives had never heard English, and the pidgin was learned from other natives by the "boys" recruited to work on the plantations, or for the government or traders. A new "boy" would be taken in hand by his companions and

regularly taught the pidgin, the same as any other language. Here the pidgin was developed into what might be regarded as a real, though simple, language, and the natives became very fluent in its use. Many native and many Malay words were introduced to help out the small vocabulary of English words, for, as they seldom or never heard English, they could not draw on that source. They were anxious to do so, however, as I was often asked for the names of things, when there was no pidgin word for them. Many times I have noticed my "boys" at a short distance listening intently while I was speaking English to some European, evidently trying to catch some new words. Ordinary English, of course, was unintelligible to them. It is interesting to note that, while many "boys" could understand a certain amount of German, not a single German word, so far as I know, was ever taken into the regular pidgin. The Germans had to learn this pidgin, and usually from the natives. No white man, however, ever learned to speak it as fluently as the natives. In any group of "boys" (i.e., servants or laborers) there were always many different tribes and languages represented, and so the pidgin became the regular language for use among the "boys" themselves, and they developed it to such an extent that they could tell stories or express any common idea by its means. This was done partly by adding native words, but especially by using peculiar forms of expression. In fact, few Europeans could understand the natives when they got to telling stories among themselves.

In the English territory the pidgin is more like a simplified English. It is used almost entirely in speaking to Europeans, as among themselves the natives usually use some native language, which is soon learned by all, and becomes the common means of intercommunication for that region. Thus on the south of Papua the Motuan language is spoken by all the "boys" and most of the older traders and officials as well. A large part of the recruited laborers never learn pidgin at all. Hence while travel-

ing in the English territory it was often difficult to find interpreters, that is, natives in the different villages who could speak any English, pidgin or otherwise; while in the German territory every "boy" who had ever been recruited for work could speak pidgin fluently, and there were former "boys" in practically every coastal village and many interior ones.

In the following pages an endeavor will be made to describe as far as possible the life of the natives before it was modified by contact with Europeans.

Groups, Villages, and Houses

Tribal Groups

In the introduction mention has been made of the fact that the Melanesians are divided into a great number of tribes or groups speaking more or less distinct languages. These groups are not tribes in the strict sense of the word, with a definite organization and a tribal head or chief. They are local and may be composed of one or many villages, more or less related to each other and having a common language and common interests. These groups are usually somewhat hostile to outsiders, though war and actual fighting may take place only on special occasions. Very frequently there is a wide stretch of uninhabited or neutral territory between them. The large and powerful ones often extend their territory at the expense of their neighbors, and small ones are frequently exterminated, or absorbed into the larger ones. These larger groups will later break up into smaller ones, or certain portions may break off and move into other districts, driving out or exterminating the former inhabitants. Such movements are common, especially in the large island of New Guinea, and in the course of time lead to extensive shifts in the population.

Trade

The advantage of a peaceful exchange of produce and commodities, that is, of trade, has been recognized by many, if not most, of these groups. This has doubtless helped to bring about peaceful relations between many of them, though the peace may be only temporary. An

interesting example of a purely temporary peace is found on Malaita, one of the islands in the Solomons. Here the coastal peoples in some places have been forced by the neighboring interior or bush tribes to live on small islands or islets a short distance offshore, in order to save themselves from being exterminated. These islands are so small that there is no room for cultivating vegetables, and hence the people must live on what they can obtain from the sea. The bush people, on the other hand, can do no fishing, as that would subject them to attack by the island people. As they desire fish and the island people wish vegetables, certain market days have been agreed upon, when hostilities are suspended. Then the bush folk bring down great loads of vegetables to the beach, the island people bring over fish and other sea produce, and trade goes merrily on, to their mutual advantage. The women do all the trading, while the men stand around with their weapons, watchful and suspicious; but an infringement of the peace seldom takes place, as both sides recognize the value to themselves of their trading. At any other time or place, these people would fight on sight. Usually, however, they keep to their own territory.

As a rule, trade is not carried on under such difficulties, and many groups have a considerable amount of trade with each other on a friendly basis. This is especially true along the coast and among the smaller islands, where extensive trips can be made easily by canoe. Even between hostile tribes there is usually a certain amount of trade, and objects of value are frequently passed from group to group over considerable distances. Occasionally, however, there seem to be absolute barriers, across which there is no trade or friendly intercourse of any kind, even where there are no geographical barriers such as help to isolate many mountain groups.

Warfare

The common condition then throughout Melanesia is that the population is divided into small or medium-

sized groups, numbering from a few hundreds up to many thousands, living in restricted areas, suspicious of all strangers, and having little to do with their neighbors except where trade relations have been established, or when, for one reason or another, they choose to make a raid into their neighbors' territory. A few weak tribes have been forced into almost inaccessible mountain regions, or into the depths of extensive swamps, where they still manage to exist in spite of the unfavorable conditions. One such swamp group gave rise to the myth of a webfooted tribe, a characteristic attributed to them by their neighbors. Necessity had, indeed, caused them to become very good swimmers.

On the other hand, some groups, under capable and energetic leaders, have extended their territory and brought under subjection their neighbors, who are held in a state of vassalage. These leaders have considerable power, and are often called kings by the European traders. Such was "King" Gorai, of the Shortland Islands in the Solomons, and "King" Thakombau, of Fiji. In Fiji this condition has become definitely recognized as hereditary, and the conquering group has founded an hereditary aristocracy, the inhabitants of Bau being so recognized by their neighbors. This development was probably due, in part at least, to Polynesian influence.

Within these principal groups the people are divided into a number of local groups or villages, not formally united, but held together by common interests and traditions, often by family relationship. Such authority as exists is that of custom and tradition, invested in a council of old men, except where some individual obtains control through superior intelligence and energy. Underlying this formal or political organization, or lack of organization, there is usually an extensive network of secret societies and social or totemic groups, varying greatly in different regions, but with which we need not concern ourselves here.



Fig. 1. Pile village at Island of Rambuty, in the Admiralty Islands. Many of the houses are connected with the shore by foot bridges made of poles.

Social Classes

The division of the people into social classes of lower and higher rank is common in most places, even if there is no strong central political authority. These ranks are often hereditary. The heads of families of the highest rank are often called chiefs, and they exercise great power and influence within the group. Such conditions are very common in the eastern Solomons, where the admixture of lighter-colored peoples has been greater than in most other places.

The villages are usually small, the number of inhabitants seldom exceeding a few hundred, or at the most two or three thousand. They are scattered here and there in the forest or along the beach or the banks of the streams, often on small islands offshore or on piles out in the shallow water of lakes, bays, or lagoons (Fig. 1). They are usually open, but sometimes are stockaded, often being placed on more or less inaccessible hilltops, or ridges. In Fiji some

of the villages are regular fortresses, elaborately fortified with earthworks. The gardens and fields of the inhabitants are usually near-by, but may be at some distance; and the paths, both to the village and the gardens, may be concealed and difficult to find. These things vary greatly with the locality and the danger from hostile attacks. Sometimes the occupied or inhabited area is almost one continuous series of fields, gardens, and villages. In such cases, however, the group is either too strong to be successfully attacked, or it is well protected from its hostile neighbors by wide stretches of swamp or mountains.

Houses

The houses in the villages are commonly irregularly arranged around a central open area or along a sort of street (Fig. 2). In a large village there may be several of these open places, each with its group of houses. Otherwise there seems to be no definite arrangement aside from that due to the character of the location, or to the type and character of the houses of that particular region. In this respect there is great variation. In some places every family has its own house. In others there are not only the family houses but also separate houses for the men, for sacred purposes, for public gatherings, and for the secret societies. In some places the whole group of families which would otherwise compose a village, lives in one large communal house. The complexity of the social organization is, of course, an important factor in determining the variety of houses used in any particular group. Where all are on an equal footing, with no secret societies and the simplest form of religious beliefs, a single type of house may suffice, though even here some sort of shed for village gatherings, small storage huts, etc., are usually found.

Clubhouses for Men

In most parts of Melanesia, however, there are separate houses, which may be called clubhouses, for the men,

where the adult unmarried men live. These usually differ in appearance from the family houses, often very strikingly. In some places, as in the Purari Delta, they are very large, fifty to seventy-five feet high in front, and can accommodate a hundred or more men (Fig. 3). On the north coast they are often small, round or square, and have two stories, a condition very uncommon in Melanesia. The upper story is enclosed and is used as a sleeping place; the lower story, three or four feet above the ground, is open, and is used as a lounging or working place during the day.

These clubhouses are the general gathering places for the men, and a village will have one or several of them, according to its size. Here strangers are entertained (unless there be a special guest house), and here the married, as well as the unmarried men, spend much of their time, and often sleep, so that they usually keep their weapons and strictly personal possessions here instead of in the family or women's house. If there are several wives, each wife usually has her own house, but they may occupy one house, in which case it is divided into separate rooms for each family.

Religion in Clubhouse

The men's house may serve as the religious center, where are kept the sacred images or objects relating to their religious beliefs, or there may be a separate house for this purpose. In the latter case this is usually the best built and most elaborately decorated house in the place. On the north coast of New Guinea some of these sacred houses (here called *tamburan* houses in pidgin English, from a word belonging to one of the native languages meaning "spirit") are wonderful examples of native wood-carving and painting. In Fiji the "temple" was carefully built and ornamented, not with carvings and paintings, which were rarely made in this group, but with decorative designs on the reed walls and sennet-wound timbers.



Fig. 2. Village of Mou, Roro district, Papua. In this region the houses are usually built on piles facing a wide sandy street. At the right may be seen the high projecting front of the men's clubhouse. The other buildings are family houses.

Other Buildings

Besides these main types of buildings a few others are often found. Tree houses for refuge or lookout purposes occur in many places in the New Guinea mountains. Separate shelters for yams or other food supplies are often present, though usually the food kept on hand is stored in the family house. Sometimes there is a separate hut for cooking, especially where hot stones are used for baking. Occasionally one may find a pigsty, though valuable pigs are often kept in the houses, especially in the New Hebrides. Some villages have guest houses for strangers; shelters where the men may sit and work and talk are common. All these minor structures are of small importance, however, and would hardly be noticed in most villages.

In regard to cleanliness, conditions vary greatly. Usually where one found the largest and best-built houses

the villages were also kept in the best condition. Here the open space around and between the houses was kept free of all vegetation, except large trees or ornamental cultivated plants, which might at times be present. The ground was kept clean by being frequently swept by the women with stiff fiber brooms. The finest-appearing villages I saw were in Fiji and parts of New Guinea. Some were entirely in the open, with a regular arrangement of houses and open spaces or streets (Fig. 2). Other villages were buried in groves of coconut, breadfruit, or shade trees. Coconuts are usually not planted very close to the houses, however, as there is danger of being hit with a coconut or a falling leaf. As a coconut leaf may be fifteen or more feet long with a stem five or six inches thick, it is not very safe to sit under a coconut tree in a strong breeze.

Construction of Houses

As iron is unknown throughout Melanesia, all buildings are tied together with vines, rattan, or cord, such as the plaited coconut-fiber sennet of Fiji. The general plan everywhere is that of a framework of timbers, sometimes smoothed or carved but usually in the round, often with the bark still on. This frame is roofed with a thatch of grass or leaves (Fig. 4), and the walls, if any, are generally of the same materials, though usually they are differently constructed. Sometimes plaited reeds, bark, small sticks or bamboo, or even hewn planks are used for the walls. The earth is the only floor in many places; in others there is a special floor usually raised from three to six feet above the ground, but sometimes as much as ten or twenty feet or even more. The floor is not attached to the frame supporting the roof, but is supported by separate posts (Fig. 3, *b*). For flooring, the outer parts of the stems of certain palms are usually used. These are laid on poles that are supported by heavy timbers resting on the notched or forked ends of the upright posts. In



Fig. 3a. Frame of the men's clubhouse at Maipua, Purari Delta, Papua. The rear is low and already thatched.

Fig. 3b. Front of the men's clubhouse at Kairuo, Purari Delta. The front of these houses is left open, except for a screen of leaves about six feet high. The short posts supporting the floor and front platform can be seen.



this case the floor is fairly substantial. It is not always so well made, however, and may be of loose poles or thin strips that threaten to give way at every step. When the floor is raised, there is usually a front porch or veranda at the same level or somewhat lower. Access to the porch is gained by a sort of ladder made of a couple of poles, with sticks tied on for rounds, or possibly of a larger timber with notches for steps. Sometimes posts of different heights set in the ground serve as steps, or even ruder contrivances may be used. Unless the house is large there is usually no opening but the single doorway, which can be closed with mats, or a sort of door made of a frame covered with leaves or mats. This is sometimes suspended from a pole over the doorway, and can be swung up from the bottom or slipped sideways on the pole.

The houses, except in those regions where they are occupied by more than one family, are simple structures with only roof and sides, and no partitions or separate rooms. While the size and shape vary, the family house is seldom much over ten to fifteen feet across and fifteen to twenty-five feet long and usually it is considerably smaller. There is nearly always a fireplace somewhere near the center. If the house has a wooden floor, there often is a sort of box from three to eight feet square let into the floor and filled with earth, on which the fire is built. This fireplace is used for heating and cooking, and for drying fish or other objects, which can be placed on a rack or swinging frame suspended from above. At the sides or ends of the room are usually one or more platforms or lofts on which pots, wooden dishes, baskets, surplus food, and firewood can be placed. These may be anywhere from four to eight feet or more above the floor. Also, suspended from the roof by rattan, are often two or three wooden hooks on which bags of food or anything liable to be injured by dogs or rats can be hung. Small valuables are usually wrapped up in leaves and carefully hidden away in the thatch.



Fig. 4. House-building at Sissano, in New Guinea. The floor is about five feet above the ground, but the rafters come down to the ground, enclosing the space underneath the house. The roof is made of overlapping sheets of sago-palm leaves. Two of these may be seen on the ground leaning against the front of the house, and others at the back and on the roof. These sheets are made by doubling a row of sago leaflets over a long, slender stick, and pinning or sewing the two sides together close to the stick. There is a type of native ladder leaning against the doorway.

Furniture

There is little that can be called furniture in these houses. Except in rare cases, the natives sit and sleep on the floor. In a few places in New Guinea low wooden stools are found, and in some other places low benches of poles or plank (Admiralty Islands, New Ireland) are used to sleep on at night, and for sitting and reclining on during the day. Sometimes there is a raised platform along one side or end, as is often the case in Fiji. Wooden head or neck rests (Figs. 5, 6) are common and serve to keep the carefully arranged hair or head-dresses from being



Fig. 5. Two wooden pillows from Tami, Huon Gulf, New Guinea. They are about six inches high. There are innumerable variations of this design.

disarranged. Leaf mats may or may not be used to sit or lie on. Very rarely will a mat or a piece of bark cloth be used for covering. For warmth the natives keep the fire going and close up the hut to keep in the heat. Sometimes, if they sleep on a bench or a platform of poles, a fire is made below. The smoke from these fires also serves to drive away the mosquitoes, which are very bad in some places. Occasionally, as on the north coast of New Guinea, they may use a large sleeping bag made of a soft pliable reed, into which several may crawl to keep away from the mosquitoes (Fig. 7). In coast villages they sometimes build platforms out over the water and stay on these at night. In Fiji large mosquito-proof curtains are made out of tapa. Large curtains made of tapa cloth are also used as screens.

Sleeping

While traveling along the south coast of New Britain I stopped one night in a village and was given a place in the men's house to set up my cot. This house was not very large. It was fitted with about a dozen pole benches

or beds for the occupants. Each of these was made by setting four stakes, forked above, in the ground, about two feet apart one way and four the other. There was no floor except the ground. A crosspiece was placed on these uprights at the head and foot, and from eight to a dozen poles five or six feet long were laid on these crosspieces. These poles were one or two inches in diameter and not always very straight. On these the men lay at night with no mat or covering. The night was rather cool, and several of the men started fires under their cots, which were about two feet high. Finally the smoke got so thick that I could hardly stand it, and I requested the men to remove the fires. This they did, apparently quite cheerfully, and built a large fire outside, where most of them sat and talked till morning. I might add that I was traveling alone with the natives, in a region rarely visited by Europeans. There was only one white settler within a hundred and fifty miles, and his station was forty miles away. My guide and interpreter, however, was the son of one of the most influential men in the region.

While there is a great variation in the houses found in most regions, there are generally certain characteristics that distinguish the better-built houses, at least, of the

Fig. 6. Wooden pillows from the north coast of New Guinea. One (the left) is carved out of a single piece of wood, the other has legs of rattan.



various groups and districts. These usually have to do with materials and methods of construction rather than with form, though there are certain peculiar forms limited to particular areas, such as the sloping roof which is so common in the Papuan Gulf region of New Guinea.

Houses—Fiji

In Fiji the houses vary in shape from round to rectangular, according to the district. They are often built on a raised earthen platform, which serves as the floor. The roof is thatched with bunches of grass, tied on with cord or rattan; sometimes the leaves of certain palms or of the sugar cane are used, in which case they are doubled over a stick a few feet long, and sewed or pinned down, each leaf overlapping its neighbor on one side. These sheets of leaves are then put on like shingles, beginning at the eaves. This is one of the most common ways of making a roof throughout all of Melanesia. The sides are made of one or more layers of plaited reeds, or are thatched with grass much like the roof. They may be as much as three feet in thickness. The houses, therefore, can be kept warm with a fire during the nights of the cool season.

Houses—New Caledonia

In New Caledonia the houses are usually circular, with conical roof and a tall center post (Fig. 8). They often have a carved wooden ornament on the top of the roof. The roof and sides are thick, and the sides are usually lined with bark in addition. The doorway can be closed with mats, so that the houses can be made quite warm, which is necessary, as the nights are cold during the cool season. The floor is of earth, usually slightly raised.

In the New Hebrides, Solomon Islands, and Bismarck Archipelago the houses are usually rather low, small and often crudely built, generally with earthen floor. The shape is usually rectangular.

Houses—New Guinea

It is in the large island of New Guinea that one finds the greatest variety in form, size, and method of construction. On the coast the houses are rectangular, and nearly always the floor is raised several feet above the ground. Circular houses are found in the interior. Many villages are built on piles in the shallow water of protected bays and lakes. Sometimes the platforms around and connecting the houses are connected with the shore (Fig. 1); at other times the houses stand far out in the water, and can be reached only with canoes. Such villages are found on the south coast of Papua, and the north coast of Dutch

Fig. 7. Interior of men's house at Kirau, near mouth of Sepik River, north coast of New Guinea. This also served as a sacred or "tamburan" house. Attached to the rear post is one of the sacred images, and other ceremonial objects, such as wooden masks, are kept in a small loft at the upper right, surrounded by coconut leaves. At the lower right is a fireplace under a sleeping platform of poles. Beyond this is one of the large mosquito-proof sleeping bags used in this region, and the top of another is visible in the middle foreground.



New Guinea, especially in Geelvink Bay. Here the houses are large, with a central passage opening on a veranda at both ends. On each side of this passage is a row of separate rooms, each occupied by a family. Each compartment has a doorway into the passage and also one to the outside. The women are required to use the outside doorway, and by means of ladders can reach their canoes, which are kept tied beneath the house.

Communal Houses

Communal houses of very large size are found in British New Guinea near the Fly River. One of the largest was 490 feet long, 117 feet wide, and 70 feet high. Here also there is a central passageway, forbidden to the women, but the side rooms are arranged in two or three stories, the upper ones being reached by ladders. Usually a whole village occupies a single house. When one remembers that these people have only stone axes and tools, and that the building is fastened together without nails or pins of any kind, the amount of work required to erect such a structure, with its large and heavy posts and beams, can hardly be imagined. It is necessary also that all posts and important timbers be of a particularly hard and heavy wood which is able to resist the attack of termites or white ants.

The whole village, of course, unites in the erection of such a house; but even in the case where there are individual family houses, all are supposed to assist, their only recompense being the big feast which the owner must give the workers, and the knowledge that each individual is entitled to the same assistance whenever he may need it. As in other places, there are at times persons who rebel against social customs. While traveling by canoe in the Purari Delta, I had at one time a crew of paddlers from a village where a large house was being constructed, and the old men of the village were considerably offended



Fig. 8. Circular house in Pombia village, northern New Caledonia. The earth floor is somewhat raised. The carved plank on each side of the doorway, and the peculiar roof ornament, are characteristic. In parts of New Caledonia the roofs are much steeper and higher.

because some of the young fellows would rather work for me for pay (tobacco was preferred by most) than labor at house-building. Probably they had to surrender all the tobacco when they returned home.

Food and Stimulants

Domestic Animals

Mention has already been made of the fields and gardens belonging to the native villages. While the inhabitants are not averse to eating practically everything they can find that is edible and nutritious, they still are compelled to raise the greater portion of their food. Their only domestic animals are pigs and dogs, with occasionally a few fowls. Dogs are not usually eaten and to keep many pigs requires a great deal of labor to raise food for them. If left to shift for themselves, they disappear into the bush. Sometimes the boars are allowed to run wild and the sows are blinded to prevent them from wandering too far afield. In any case, pork is a luxury, and pigs are seldom killed except for feasts, the natives preferring to live on vegetables rather than to make the extra exertion necessary to raise food for a large number of hogs. Wild animals are neither large nor numerous, and while the natives are fond of hunting, they do not get in this way any great supply of food.

Hunting

The wild pig is the most prized game animal, though any creature large enough to eat is acceptable. Pitfalls are often dug, and traps of various kinds set in the runways. Pigs and cassowaries are often hunted with spears. In many places a special heavy boar-spear or lance is used. Pigs may also be driven into nets or into the water and speared or shot with arrows. In a few places dogs

are used to assist in hunting. While two or three men, or even one, may go hunting for small game, usually a number join together when a hunt or drive is to take place. In some places very long, strong nets, from three to five feet high, are set up in a wide semicircle in the bush, and a passage is cleared behind them in which men are stationed at intervals. A stretch of bush is then surrounded, and with much noise and shouting the animals are driven into the net. Then they are speared or clubbed by the men on watch. Often a section of grass or bush is fired, and the animals are killed on trying to escape.

Birds are caught with bird-lime, snares, and nets of various kinds, and shot with bow and arrows, or, in western New Britain, with the blow-gun. This is made of two or three sections of bamboo, carefully fastened together, and is fifteen to twenty feet in length. The arrow is two or three feet long, with a bunch of feathers on the rear end. Sometimes in New Guinea a passage two or three yards wide is cleared in the bush across the top of a ridge, and in this a fine-meshed net is set up, with a more open net through which the birds can just pass, on each side. The birds flying from one valley to another naturally choose the open passage over the ridge, and, while able to get through the wide-meshed net, are stopped by the second finer one and are easily shot with arrows before they can struggle out of the narrow space between the nets. These nets are made of strong cord, so fine that they are almost invisible in the shade.

Sea Food

The water is more productive of animal food than the land, at least to those tribes living near the shore. Such tribes can usually keep from starving, even when their crops fail. In many coast villages fishing is the main business in life for men, women and children. The women and children search the reefs at low tide for everything edible, using small hand-nets to catch the fish in



Fig. 9. Large fish-traps hung in tree at Matupi, near Rabaul, in northern New Britain. The traps are from six to eight feet long, and are made of such thin strips of bamboo that they would become distorted by their own weight if laid on the ground when not in use. A large coil of rattan anchor-rope can also be seen, and behind the tree is a canoe covered with leaves to shade it from the sun.



Fig. 10a. Fishing in a narrow inlet near Sissano, on the north coast of New Guinea. Women with dip nets are wading along with their canoes, into which any fish caught are tossed.

the shallow pools. The men fish in the open sea, with hook and line, bow and arrows, spears (frequently at night by torch light), large seines and nets of various kinds, and all sorts of traps. These traps are often quite large. They are sunk in water twenty or thirty feet deep, with a float to support the end of the line attached to the trap. In northern New Britain a large floating trap (Fig. 9) is used, anchored in place by a long rattan cable tied to a heavy stone. The upper end of the cable is fastened to a bamboo float, to which the trap is also attached by a short line. These traps are often set in fairly deep water a mile or more from shore, and a small tree or bush is fastened upright to the float so that the trap can be found. When approaching Rabaul by steamer I have seen a number of these bushes apparently standing upright on the surface of the sea.

Permanent traps of various shapes are built by driving stakes close together to form enclosures into which the fish can easily wander but from which they find it hard to escape. I have seen lagoons lined for miles with these fish-traps and fences. Advantage is also taken of the

rise and fall of the tide to build enclosures, often of stones, into which the fish wander at high tide. As the tide falls, the fish are carried with the outgoing current into openings in the enclosure in which fish-traps are set. It is common also for a group or even a whole village to unite in a drive for fish in shallow lagoons or channels. Each person is supplied with a dip net, and the fish are driven either into the nets, or into traps set at certain places in the channel (Fig. 10, *a*, *b*).

Fishing

Fish-hooks are usually of shell or tortoise shell, sometimes, in part at least, of wood or bone. They are generally used without bait, the fish being attracted by the colored or shining surface. They are seldom barbed. A peculiar method of fishing with a kite is found in a few places, such as the Solomon Islands and the Admiralty Islands. The bait is a small bunch of spider-web on the end of a line attached to the tail of the kite. This is flown from a canoe in such a way that the bunch of cob-

Fig. 10b. View, from downstream, of fish fence and traps into which fish are driven.



web is made to skim along the surface of the waves as the canoe moves along. Certain fish (*bonito*) grab at this and get it entangled in their teeth; then they are easily caught.

In some places, New Ireland, for example, sharks are caught with a strong noose of rattan attached to a large wooden float. The noose is manipulated by a man in the canoe, while the shark is attracted by a peculiar rattle made of coconut shells. When snared, the shark is drawn in and killed with a club, or, if it breaks away, it wears itself out struggling with the float and is easily drawn up again. Both the kite and the shark-rattle methods are also found in the East Indies. The natives seek eagerly for turtles, especially those yielding tortoise shell, which is much valued for ornaments. On the north coast of New Guinea they are often speared with large spears of light wood having a detachable barbed head fastened to the handle with a short heavy cord. The cord serves to hold the turtle, while the large, light spear-handle acts as a float.

In the inland rivers and streams fish are not so plentiful. Here the usual methods of catching them are by large and small nets, snares, traps, and weirs. Small hand-nets are sometimes made of spider-web. The frame is first made, and then twisted around among a lot of strong webs till it becomes covered with a layer of the web. When the net is used the web stretches so as to form a sort of bag. One interesting little trap frequently found in New Guinea is a hollow cone made of thorny rattan with all the thorns pointing inward. This trap is tied to a stone or stake, and bait is placed at the inner end of the cone. The fish shoves its head in to get the bait, but cannot withdraw it because of the thorns.

In many places mashed leaves, stems, or roots of certain poisonous plants are thrown on the surface of some quiet pool, or, if there is a slight current, at the upper end so that the poisonous matter is gradually diffused through the water. The fish, soon becoming

stupefied, rise and float on the surface. They must be gathered in quickly as in a short time they recover as the poisonous solution becomes weaker as it spreads farther or is carried away by the current. The fish are in no way injured for food.

All sorts of snares are used for various small animals. The small boys in Fiji showed me a very interesting little trap used for catching crayfish. A trap almost identical is used for catching mice in New Guinea. While the general methods of hunting and fishing are much the same throughout Melanesia, the details vary greatly from place to place.

Division of Labor among Tribes and Villages

There is frequently a division of labor among the tribes or villages, the coast tribes, for example, having no gardens, but exchanging their extra fish for vegetables raised by the interior tribes. Also there are many villages and even tribes that live partly or even largely by manufacturing—trading pottery, ornaments, weapons, or other objects for food. There are a few wretched wandering tribes that have no gardens or manufactures and live on what they can find in the way of food. All others depend chiefly on garden produce, with the exception of those whose main support is sago. Sago is obtained from the pith of several species of palms (especially those belonging to the genus *Metroxylon*) growing in swampy soil, and hence is the chief food of many tribes living in swampy districts such as the deltas of many of the large rivers, where suitable soil for gardens is hard to find. Although taro is much more nutritious, and is preferred by the natives when they can get it, sago can be obtained so easily that it is extensively used by many tribes.

Sago Palms

The sago palms grow to considerable size. They are usually from twenty to thirty feet in height, with a trunk



Fig. 11. Washing sago near Kirau, on the north coast of New Guinea. The washing place is on firm ground in or near the swamp where the sago grows. If no open water is near, a hole a few feet deep is dug, and, from this, water is dipped and used in the washing process. Two washing troughs are here shown, and against the rear of each is leaning a long-handled coconut dipper. Piles of washed-out fiber may be seen by each trough, with the settling basin beyond. Just beyond the feet of the woman at the left is a basket used to carry the mashed sago to the trough. The trough is made by cutting off the lower end of the stem of a sago leaf. The woman at the right is working or kneading the mashed sago pith in the trough to help remove the starch.

from fifteen to twenty inches in diameter. Like the century plant, they produce one set of flowers and fruit, and then die. In preparation for their fruiting they store up in the trunk a great reserve of food material in the form of starch. This is, of course, used up in the fruiting process, and in order to get the greatest amount of sago starch the tree should be cut down as soon as the flower-spike begins to appear. The hard outer portion of the trunk is then partly removed and the soft inner part, about the consistency of a rather firm piece of cake, is

pounded with a special kind of hammer to break it up so that the starch can be washed out from the coarse fibers that run through it. The washing (Fig. 11) is usually done in a trough made from the base of the large sago leaf, the water and the starch running out into a settling pan made of a leaf or flower sheath, while the woody fibers are held back by a strainer of some fibrous material, frequently made from the sheath of the coconut leaf. After the starch has settled the water is drained off and the sago meal packed in leaves and taken to the village.

This work is usually done in the swamps where the palms grow, or the trunk may be cut into sections and floated down to a working place near the village. The sago meal is sometimes used immediately, or it may be packed into large casks made of leaf sheaths (Fig. 12), bark, or the hard outer rind of the trunk of the sago palm itself. Though the sago meal becomes sour, it can be kept for several months in this way.

Fig. 12. A sago cask at Tumleo, Berlin Harbor, on the north coast of New Guinea. The cask is on a platform under a shelter at the rear of a house. At the left is a grave with a low sheltering roof or cover on two posts, one at each end.



No other wild plant is of any great importance as a source of food, though there are a number that are used to some extent, especially in time of scarcity. These are usually starchy roots, fruits, nuts, the growing tips of certain plants, and many kinds of leaves that are used as greens. A few wild fruits are found, but they are neither very good nor very common, and none are cultivated except the breadfruit tree, which grows wild in most of the islands. No cereals and few seeds are used, with the exception of a few wild nuts, of which the *Canarium* nut is the most important. These nuts are frequently ground up and mixed with mashed taro and coconut milk or oil to form the native pudding, the mixture being wrapped up in leaves and baked over hot stones in the so-called "South Sea Island oven." Sometimes these puddings are very large, especially in Fiji, where one is reported by Williams to have been twenty-one feet in circumference.

Garden Crops

The most important of all garden crops are taro, yams, and bananas, one of these three usually forming the staple food in any particular region. In Fiji, New Caledonia, and the New Hebrides yams have first place, while in New Guinea taro is most important. Bananas and plantains are raised largely in the interior and the mountainous regions of all the islands. There are dozens of different varieties of each one of these plants, and probably several species, at least in the case of yams (*Dioscorea*). Even in a single region the number of varieties that are recognized by the natives is often astonishing and indicates the care bestowed on their cultivation. Gunn reports that in the small island of Futuna, one of the New Hebrides, there are eighty-seven varieties of yams, ninety of taro, seventy of bananas and plantains, seventy-five of breadfruit, twelve of sweet potatoes, and thirty-eight other roots used as food. The Sulka of New Britain are reported to distinguish by name 450 varieties of taro, besides hundreds of varieties of other kinds of cultivated plants.

Many of these varieties differ greatly in size, appearance, and flavor. Some of the bananas are small, not more than an inch or two in length, but with a delicious flavor, while some of the huge coarse plantains may be nearly as large as one's arm. These are always cooked. Some of the varieties of yams may grow up to six or eight feet in length, with a weight of one hundred pounds or more. The large varieties are not always coarse, but the medium-sized are usually the best, and a freshly roasted yam of one of the better varieties, is, in my opinion, far superior to a baked potato. Taro, however, is the most generally satisfying, and one of the most nutritious of all root foods. The plant is an aroid, closely related to and much resembling *Caladium*, with large, peltate, somewhat heart-shaped leaves springing from the single root. This is rather short and thick, averaging from three to five inches in diameter. It may be baked, roasted, boiled, or made into the native pudding. In each region there are a number of different varieties, some of which are better treated in one way, some in another. There are two main divisions: swamp taro, which usually has to be irrigated, and dry land taro.

While taro, yams, and bananas or plantains furnish the bulk of the food used by the Melanesians, a number of other plants are also cultivated, especially sweet potatoes and breadfruit, which are used extensively in certain districts and are rarely found in others. The breadfruit tree is cultivated chiefly in Fiji and the New Hebrides, but the wild breadfruit is found and used in many other places. Sugar cane is frequently cultivated, and some exceedingly tall varieties are raised in New Guinea. The natives chew the stalk, extracting the juice, of which they are very fond, but they have not reached the stage of manufacturing sugar.

Coconuts

While coconuts are raised practically everywhere in the neighborhood of the seacoast, they do not form an

essential part of the native's food, as they do in the low-lying coral islands of Polynesia and Micronesia. Coconuts are commonly used before they are ripe, when the meat is soft and more digestible, and the water found within furnishes a most refreshing drink. From the ripe nuts the natives extract the oil, which is frequently used in cooking but more generally is applied externally. Sometimes the whole body, as well as the hair, is dripping with oil.

Cooking

Aside from coconuts, some bananas (these as well as plantains are usually cooked when used to any extent), and a few other fruits, nuts, and animal forms that may be eaten raw, the native food is carefully cooked. It is baked over hot stones, roasted over an open fire, boiled in earthen pots, or steamed or roasted in bamboo tubes. When pottery is lacking or scarce, or when a considerable amount of food is to be prepared at one time, as for feasts, the method of baking with hot stones in the native "oven" is usually employed.

These ovens vary greatly in size and in the care which is taken in their preparation. In the simplest case a few stones are heated in a fire, the ashes scraped away, and some leaves laid on the stones, on which the food to be cooked is placed. Over this more leaves are arranged, and the whole is covered with some loose earth to keep in the heat and steam. Usually, however, a hole is lined with stones on which the fire is built, and the food is placed on the stones after they have been heated and the embers removed. These ovens remain closed for several hours, the natives knowing by long experience just about how much time is necessary. This is one of the best methods of cooking known, and those who have tested it will agree, I think, that roast pork out of one of these ovens has a flavor that more civilized methods of cooking cannot produce. Sometimes, especially in Fiji, in preparation for important feasts, these ovens were of immense

size. I saw one opened, on the occasion of a house-raising, which contained about half a ton of taro and yams, and two large hogs, baked whole, hot stones having been wrapped in leaves and placed inside after the entrails were removed. In old times an oven would often contain many times this amount.

This method of cooking is in common use throughout Melanesia, but where earthen pots are found these are usually employed for cooking small amounts, as boiling is easier and takes much less time. Roasting in the ashes or over the open fire is usually more or less a makeshift, and not employed for regular meals. Cooking in bamboo tubes is much employed in the interior of New Guinea.

The preparation of food to be cooked is simple. Vegetables are scraped with a bone or a shell knife, and often pared. This is done with a shell knife made of the half of some rather thin bivalve like a pearl shell, with the outer edge sharpened. It is grasped in the hand with the thumb on the inside and the fingers outside, and is shoved away from the user. A bamboo knife is commonly used to cut up animals.

The so-called "puddings" are usually made of roasted or baked taro or breadfruit, mashed up in a large wooden dish or special mortar, mixed with grated or mashed nuts, coconut oil, or other ingredients, and then baked in smaller or larger cakes in the ovens. Various mixtures are prepared in this way, some of which are very tasty and much appreciated even by Europeans.

Cooked food is served on leaves or leaf platters, wooden platters or bowls, and occasionally earthen bowls, depending on the place, material, and method of cooking. Most of the food is rather firm and dry and can be served on leaves or mats and eaten with the fingers. More fluid dishes are served in bowls and eaten with shell or coconut-shell spoons. Wooden or coconut-shell ladles may be used in serving. Knives are not used; wooden or bone forks are found in a few localities.

For feasts and special occasions the natives use everything obtainable in the way of food. Ordinary meals are usually made up largely of one staple such as taro, yams, or sago, with a certain amount of other things such as greens, fish or other sea forms, shredded coconuts, or puddings, to give a little variety.

They have no condiment but salt and even that is lacking in the interior. The inland natives often go several days' journey to the coast, and take back their salt, in the form of sea water, in bamboo tubes. They have such a longing for salt that they drink the sea water; that taken home is used chiefly in cooking. The natives from the interior also come to the beach and burn the driftwood, collect the ashes, and take them home to use for seasoning. When wanted, a portion of the ashes is mixed with water, and, after settling, the salt solution is poured off and used in cooking, enough being added to the food to give the proper flavor. In some places in the interior certain plants are burned and salt is extracted from the ashes. In the interior of New Guinea salt is often one of the most valuable trade articles that can be carried.

Ordinarily the women do the cooking, and the portion for the men of the family is placed on a platter or bowl and given to them to eat by themselves. If they are at the men's house, it is carried to them there. When a large oven is constructed the men usually do most of the work, and distribute the food. Sometimes where there are different ranks, as in the northern New Hebrides, no woman or even man of lower rank is allowed to touch the food of the men of higher rank, who must therefore prepare their own food.

There are usually only two meals, the principal one being from four to six in the afternoon. For this the women generally bring in fresh vegetables from the gardens each day. The morning meal, about seven o'clock, may be taken cold, especially if cooking is done in large

ovens, or it may be freshly cooked. In some places a noon lunch, or even cooked meal, is taken, but more commonly there are only two regular meals during the day, and sometimes only one.

Making Fire

Usually some fire, commonly that in the house, is kept burning, but if it should go out a firebrand can be borrowed from some neighbor. When a new fire is wanted, it is easily started by means of friction. The most common method, except in the interior of New Guinea, is that known as the plowing method (Fig. 13, *b*). A shallow groove is cut in some soft dry stick, and a pointed stick of harder wood is rubbed rapidly back and forth in the groove, so that a little pile of scraped fiber gathers at one end of the groove. The fiber soon begins to glow with the heat of the friction, and with a little dry tinder added it is blown until it bursts into flames. A variation of this method occasionally seen in New Guinea is to use a sharp-edged flat piece and pull it back and forth like a draw-knife on the surface of the softer stick.

Throughout the interior of New Guinea a different method is common. In this the friction is produced by rapidly sawing back and forth a strip of rattan or pliable tough vine (Fig. 13, *a*). This is passed around a soft dry stick, usually split to form a crack in which the hot dust can collect, or else the rattan may be passed through a hole which serves the same purpose. The stick is usually held down by the feet, and placed on a coconut husk or some dry fibrous material so that the hot dust falls on this. By either method a native will have a blaze in a fraction of a minute.

In some places in southern New Guinea fire may also be made by twirling rapidly between the hands an upright harder stick set in a small hole or shallow depression of a softer piece of wood. In this case the rapid rotation causes the dust to become heated. This method is similar to that used in Australia, and may have been derived from there.



Fig. 13a. Making fire by sawing a piece of tough vine or rattan back and forth under a split stick. Photographed at Sissano, on the north coast of New Guinea. This man was from an interior village; when asked to demonstrate his method of fire-making, he took from his arm what looked like a crude rattan arm band, uncoiled it, picked up a dry stick, split the end, and with an old dry coconut husk soon had a blaze.

For their gardens the natives usually clear a new piece of land every two or three years, as taro exhausts the soil very quickly. If the gardens are close together, and spare land is to be had only at a distance, they resort to rotation of crops. For certain crops, such as swamp taro, the valleys and hillsides in some places are terraced and are irrigated during the growing season by a regular system of irrigation channels.

Terraced hillsides are found in Fiji, New Caledonia, and some places in New Guinea. The streams are dammed up in the hills, and the water is conveyed in channels along the hillsides. Aqueducts of hollowed logs are used in some places in New Guinea to get across ravines, one being sixty feet long and thirty feet above the bottom of the ravine.



Fig. 13b. Making fire by the plowing method. Photographed at Sissano, on the north coast of New Guinea.

Gardening Methods

For clearing the land the natives had originally only their stone axes, with which they girdled the large trees and cut down the small trees and bushes, and heavy wooden knives or clubs, sharpened on one side, with which they cut or rather broke off the grass and weeds. After the bush and grass had dried, it was burned, and the soil worked over with their principal agricultural implement—a heavy stick five or six feet long, sharpened on one end. The care with which the soil is prepared varies greatly. Sometimes, if fairly loose after being burned over, it is planted without further working, but usually it is turned over with the sharpened stakes, three or four men working together, and driving in their stakes near each other, often to a depth of fifteen to eighteen inches, so as to loosen up or turn over a mass of soil from one to two feet across. This is afterwards worked over with short sticks

and by hand, usually by the women and children. Then it is finely pulverized and leveled down, so that it is in excellent condition for planting. For yams it is often hilled up or made into beds, and several pieces of yams are planted in a hill. Taro is planted in holes, the part planted being a slice off the top of the taro root with the base of the leaves—from six to twelve inches—attached. The men usually do the planting, but the weeding and care of the crops are left to the women. The gardens are usually kept beautifully clean and clear of weeds.

To protect the crops from the wild pigs, it is often necessary to enclose them with high, strong fences of heavy poles, and this work of course devolves on the man and is no slight task.

Altogether the natives spend a great deal of time and much hard work on their gardens and take great pride in the results. These gardens are, in fact, the most important things in their lives, as they yield the larger portion of the food supply. During the season when the gardens need attention, the natives are very reluctant to have anything interfere with their work, and even the visit of a strange white man with all sorts of curious things for trade will not keep them in the village.

Beverages

Aside from kava, which is used only in certain areas, the natives drink water and the milk of the coconut. No fermented or alcoholic liquor was made by the natives anywhere in Melanesia, although the making and use of palm wine has been introduced by the Malays into western New Guinea. Three different substances, however, are used as narcotics or stimulants. One of them is the drink commonly known as kava, made usually from the root, sometimes from the leaves or stem of a plant of the pepper family (*Piper methysticum*). Another is the betel mixture, which is chewed. This mixture is composed of at least three ingredients: the nut of the *Areca* palm; the leaf or

fruit spike of the pepper plant (*Piper betle*; also possibly other species of *Piper*); and lime. The third is tobacco, which is smoked.

South of the Santa Cruz group, from the Banks Islands to Fiji, kava is used. There are some indications that kava was once used in the Solomon Islands and has been displaced by betel chewing. In New Guinea kava is used by many Papuan tribes, both on the north coast near Astrolabe Bay, and in southern New Guinea in the region of the Fly River. As the practice is one not easily observed, it is probable that the use of kava is much more widespread in New Guinea than has been so far reported. Altogether it seems that the practice of betel chewing is a relatively recent arrival in Melanesia from southeastern Asia or the East Indies and may have spread independently of a special or extensive migration of people, while the use of kava is older, and probably indigenous in New Guinea.

Ceremonial Drinking

The custom is most highly developed in Fiji, where the drinking of kava, or *yanggona*, as it is there called, is an important social ceremony, and must be carried out with due formality and a careful regard for rules of etiquette. A portion of the kava root is chewed by several young men, each of whom places his chewed quid in a large wooden bowl, which is used only for this purpose. When a sufficient quantity has been chewed, water is added, the mass stirred thoroughly and the fibrous portion removed by means of a bunch of fibers carefully drawn through the fluid. The drink is served in coconut-shell cups, which often acquire a high polish through long usage. Old kava bowls also show a similar polish. At present the kava root is pounded or grated; it is seldom chewed. This is also true of certain places in the New Hebrides, but in most of the islands, and also in New Guinea, the root is chewed. In New Guinea often the

stem and leaves are used also. Outside of Fiji the drinking has less of a social character, in some places each man preparing it for himself. Its use is also often closely associated with secret societies and special ceremonies. Usually and in most localities the use of kava is confined to the men. The drink is very bitter, and has a stupefying effect if taken in any quantity. Williams says: "Very few Fijians drink to excess; the intemperate are easily distinguished by their inflamed eyes and a scaly appearance of the skin. By one or two ordinary draughts a stupor is produced, from which the drinker manifests an unwillingness to be aroused."

In the other places where kava is used the extract is usually made considerably stronger than in Fiji. Usually only a small amount, a few spoonfuls, is taken at a time; but a small cupful leads to loss of muscular control and finally a heavy slumber from which the sleeper can be aroused only with great difficulty.

Use of Betel Nut

Along the coast the betel nut is used nearly everywhere, but its use and importance lessen as one goes inland. Betel chewing is also prevalent in all the islands southeastward from New Guinea to the Santa Cruz group, where both betel nut and kava are used, but the use of betel nut is displacing that of kava. The usual ingredients of the betel mixture have already been mentioned, and in only a few places are others added, as is so common in the East Indies. Where the custom is prevalent, each native carries a supply of these with him. The lime is kept in a gourd or bamboo receptacle, sometimes a folded leaf-sheath, and, with some *Areca* nuts and pepper fruits, carried in his personal bag or pouch, in which he keeps the various small private possessions he wishes to have always within reach. The lime is made by burning coral or shells, and the gourds and bamboo boxes in which it is kept are usually ornamented with

various designs, burned or scratched into the surface. In the mouth or opening is stuck a wooden or bone spatula, often elaborately carved on the outer end, by means of which the lime is conveyed to the mouth. While in India and the Malay Archipelago it is customary to have the ingredients all wrapped up together before placing them in the mouth, the usual practice in Melanesia is much simpler. A nut (unripe) is first chewed for a short time; then a piece of the pepper fruit is chewed with the other a little while, and some lime added by taking the spatula commonly carried in the lime gourd, moistening it in the mouth, placing it in the lime, and returning it to the mouth, this being repeated till a sufficient quantity of lime has been added to the quid to give it the proper flavor.

The betel mixture is chewed by men, women, and children, the latter often receiving, apparently with great pleasure, a portion of the quid which a man has been chewing. The men chew on all occasions and a visitor is first offered betel nuts much the same as he might be offered a cigar in more civilized countries. One disagree-



Fig. 14. Carved wooden mortars used by old men to mash or grind up the betel nut before chewing. From the north coast of New Guinea near the mouth of the Sepik River.

able feature of the practice is that it stimulates an excessive flow of the saliva, which is colored bright red. The chewing of the betel mixture seems to be somewhat stimulating in its effect, but not particularly injurious unless indulged in to excess. It is said to preserve the teeth from decay, but it also discolors them, and causes the gums to recede so that the teeth drop out. It is common to see old men using a small wooden mortar and pestle to grind up the nuts so they can use them. These mortars are sometimes elaborately and fancifully carved (Fig. 14).

Use of Tobacco

Tobacco is used and cultivated by nearly all, if not all, the interior and mountain tribes so far known, including the pygmies. The coast people formerly cultivated it in many places; in others they seem to have depended, as now, on obtaining it by trade. The cultivated tobacco is generally regarded as the species usually grown in America. If so, its extensive cultivation throughout New Guinea and some of the other islands is a remarkable illustration of rapid and independent diffusion.

The tobacco leaves may be dried in the sun and rolled up into bundles or rolls, which are then often traded to other tribes. Frequently, if not usually, where tobacco is grown by the natives, the fresh leaves are dried as wanted over a fire, then crumbled somewhat and rolled up in a wrapper made of some broad leaf, usually banana or pandanus, into a sort of cigarette. This is usually tied with fiber to keep it from unrolling. Throughout most of northern New Guinea tobacco is smoked in this form. In most of southern and British New Guinea a bamboo tube is used in smoking. This is open at one end, the mouth end, and closed at the other, except for a small hole on one side near the end in which the end of the cigarette is placed. The smoke is thus drawn into and through the tube or pipe (Fig. 15). When the pipe is full, it may be passed around, the holes being carefully kept closed with

the hands, each one taking a pull, usually from the smaller hole in which the cigarette has been placed. In some places to the west there is a smaller upright bamboo tube, with a sort of bowl at the top to receive the tobacco. This tube is set in the small hole in the larger tube. In this case the tobacco does not need to be rolled into a cigarette. In the interior of western New Guinea, especially in the Arfak Mountains, the natives use wooden pipes of a peculiar form, with very short stem, small bowl, and usually a projection below by which the pipes can be held. Double pipes of unusual design are sometimes used in this same region.

Outside of the interior of New Guinea, where native tobacco and pipes are still in use, trade tobacco is in great demand all over Melanesia. The raising of tobacco has also been introduced into some places. The ordinary European clay or wood pipe is used. In Buka in the Solomon Islands the natives have even learned to make fairly good clay pipes themselves.

Fig. 15. A smoke after the dance. The tobacco, rolled up like a cigarette, is held in the small hole at the lower end of the large bamboo pipe. The center man is holding a lime spatula in his hand. Note the various arm, breast, and head ornaments. The crest of hornbill beaks and strip of fur on the arm of the man at the right indicate that he has killed at least one person. Gona, northeast coast of Papua.



Clothing and Ornaments

Bark Cloth and Rattan

The clothing worn by the natives of Melanesia is never extensive, and in some places is lacking entirely. The most common article of clothing worn by the men is the loin cloth or *mal*. This term is the usual pidgin English name, and the same or a similar form is found in many Melanesian languages. The *mal* consists of a rather long and narrow strip of bark cloth, a foot or so wide at one end and narrowing to little more than a string at the other. The narrow end is wrapped several times around the waist as a belt, and the wider end brought from behind between the legs and passed under the belt portion, so that it hangs over this and down in front like an apron (Fig. 16). The *mal* is usually plain, but the apron-like end, if fairly long, may be painted or decorated with various objects, such as seeds or shells. In some places a belt of some other material, such as rattan, may be used, taking the place of the long slender end of the *mal*, which is then much shorter and caught under the belt behind as well as in front. The rear end may either hang down or be carefully tucked in. The length of the pendent portion in front varies greatly. In Fiji this is an indication of rank, men of high rank often wearing it so long that it drags on the ground, in which case it is ordinarily carried over the shoulder for convenience, being allowed to drag on all formal occasions. In most regions, however, the front end does not come below the knees and is usually much shorter, especially when plain. In place of the bark cloth *mal*, finely woven mats, often beautifully decorated,



Fig. 16. Man with small boy at Siar, near Madang, on the north coast of New Guinea. He wears a forehead band covered with dogs' teeth and one row of shells, a shell rod in his nose, a boar's tusk ornament around his neck, and leaves, probably aromatic, under his arm band. His dress is the common loin cloth of bark.

are worn in some regions (Santa Cruz). Mats made of pandanus leaves sewn together are used in southeastern New Guinea.

Complete nudity is not common, though found in several places in New Guinea and the western Solomon Islands. Usually, however, even where the *mal* is not worn there is a waist band and some sort of covering such as the small woven wrappers of Malekula in the New Hebrides and the shells, gourds, plaited fiber tubes, and ornamented bamboo boxes of central and southern New Guinea. The small gourds of northern New Guinea and the shells of St. Matthias and the Admiralty Islands are worn independent of any waist band.

Dress of Women

The most common dress of the women throughout Melanesia consists of a fringe of finely shredded leaves or string attached to a cord or woven girdle worn about the waist (Fig. 17). While this usually forms a sort of skirt reaching nearly to the knees, it varies greatly in different regions. It may be fairly thick or very thin, in which case the waist band is long enough to wrap many times around the body (New Caledonia), or a number of separate skirts may be worn over each other. The length varies from a few inches to several feet, or the skirt may be sufficiently long to drag on the ground (Erromanga in the New Hebrides). As one goes inland from the coast in New Guinea the length of the skirt is usually found to decrease. Another variation consists in making the fringe discontinuous, so that the legs are exposed on the sides; or there may be merely a bunch of fibers in front and behind. Sometimes there is nothing more than a bunch of leaves tucked under a string about the waist. This is the usual working dress in many places. In the southeastern part of Dutch New Guinea there is a bunch of long fiber from six to eight inches wide fastened to the waist band in front. This is drawn between the legs,



Fig. 17. Two young women of Siar, near Madang, on the north coast of New Guinea. Their hair is decked with red clay and oil, and each wears several necklaces of dogs' teeth and shell rings. Similar shell rings are woven on to their belts, arm bands, and leg bands. Their skirts are made of fiber.



Fig. 18. Woman and children in front of their house at Humboldt Bay, on the north coast of Dutch New Guinea. Note the great number of rather large tortoise-shell earrings, many with smaller shell rings hung to them. The women's skirts in this region are made of beaten bark cloth.

folded up, and tucked under the band behind so as to form a sort of bustle. Bark cloth, either plain or ornamented, is sometimes worn by the women. It is wrapped around the waist so as to form a sort of skirt. A cloak made of bark cloth is often worn in the colder mountain regions, and bark blankets are also used. Soft, finely woven mats are sometimes worn in the same way (parts of the New Hebrides). These are often decorated with painted or open work designs. Total nudity is less common than with men.

Children's Clothing

The above applies to married adults. Small children go naked. Clothing is assumed at various ages in different places. Often the boys wear nothing until after they are initiated into manhood, and the girls until they are married. Clothing is thus little more than a convention, a matter of social custom, rather than a covering of certain parts of the body because of any natural feeling of modesty. Any native would feel ashamed, however, to be seen without the customary clothing, and there is also a real sense of modesty present in most of them, at least. In all my association with the natives I have never seen a suggestion of any improper action.

Bodily Decoration

Ornaments are used by the Melanesians in great variety and profusion, but each region is more or less distinct from all others in the character of its ornaments, so that it is usually possible to determine from what region any but the simplest ornaments are derived. Different types and kinds of ornament may be seen in many of the illustrations (see especially Figs. 13, 14, 16-24). There is probably more extensive trading in ornaments than in any other class of objects. Even in the old times it is probable that shell ornaments were traded clear across New Guinea and also from the eastern end of New Guinea

west into the Papuan Gulf. As the natives now frequently go hundreds of miles from home to work on the plantations, they become acquainted with and acquire ornaments that their people never saw or heard of in the old times. Hence, many ornaments may now be found far from their place of origin, or at least of manufacture, for the manufacture of the different types is still limited to definite areas.

In regard to material the natives are limited to what nature supplies them. They have no metal, and the use of stone is limited to the serpentine bead necklaces of New Caledonia. Shell ornaments are in general the most valuable. These are of many kinds, depending on local styles and material available. Examples of these are the large shell arm rings of the Solomon Islands, Tanga, northern New Guinea, and the Massim district; the smaller ornamented shell arm rings of New Britain and the Admiralty Islands; the closely fitting sets of arm rings of New Ireland; the ornamented shell disks used as head and breast ornaments in the Solomons and many other regions, sometimes partly covered with thin tortoise shell cut into geometric designs, as in New Ireland and the Admiralty Islands; and the innumerable variety of head bands, necklaces, belts, breast, arm, and leg ornaments made of or decorated with shells and shell beads, or with shell rings of various sizes. Quite striking are the peculiar types of nose ornaments and nose sticks worn in many places.

Many of these shell or shell-decorated objects are highly valued by the natives, who often refuse to part with them at any price. One missionary told me he had been trying to obtain a certain kind of ornament for fifteen years, and so far had not been able to get a single one, though nearly every man in the village possessed one or more. I have seen a native hide an ornament because he saw me looking at it. My interpreter at Berlin Harbor in northern New Guinea refused to sell me a partly finished arm ring because he said he needed it to buy his

family food for the coming rainy season. At current rates it would be worth at least half a ton of sago meal, the most important foodstuff of that region. One European in the New Hebrides who had gotten hold of one of the fine arm bands of that region, made of string covered with shell beads, said a native offered him up to twenty-five pounds (\$125) for it, and when refused said, "Well, what *will* you take for it?"

While shell ornaments are the most valuable, almost every other imaginable object may be used for ornament in some places or in some way. Tortoise shell is much prized for bracelets, arm rings, and earrings. It is also used in combination with shell disks and other ornaments. Teeth of many kinds are used in different places. Dogs' teeth (canine) are commonly used on head bands, neck, breast and arm ornaments, especially by the natives of Huon Gulf. Kangaroo, cuscus, phalanger, and porpoise teeth are also used. Whales' teeth are highly valued in Fiji and are often ground down and made into necklaces—the most prized ornament a Fijian can have. Here should also be mentioned pigs' tusks. In several places in New Guinea these are used for breast ornaments. In some places, especially in the New Hebrides, the upper tusks are knocked out, so that the lower ones can grow without being worn down. These then grow around in more or less of a circle, the point often growing around through the jaw, sometimes even into its own base, so as to form a perfect circle. Usually it curves around near the base, and may make as much as two or three complete turns. Such extreme development is found only in the New Hebrides, where the boars are kept tied up, often in the houses, for many years, and fed only soft food. In New Britain and New Guinea tusks of a single coil or somewhat more are often found and are highly valued as arm rings and breast ornaments.

While shell, tortoise shell and pigs' tusks may be used alone as arm rings, nose or ear ornaments, in most of such ornaments there is a string or fiber basis. Fibers, often

of different colors, are also used alone for belts and bands of various kinds. Fiber arm bands and leg bands are the most common and the cheapest of all ornaments. While usually plain, they often have a simple geometrical design woven in. The material and the style vary in different regions.

Seeds of many kinds are used in numerous places, either strung on string or stuck on the surface of stiff breast, head, or arm ornaments. Combs and hair ornaments of wood and bamboo are common. Fur is used for head, ear, and arm ornaments. Feathers of many kinds are used, especially as head and hair ornaments, while for temporary use bright flowers in the hair and fresh sweet-scented leaves under the arm bands are quite common.

Ordinarily few ornaments are worn around the village except by the marriageable young men and women, who are often rather lavishly adorned. Nearly every man and woman, however, wears at least a fiber arm band, usually one on each arm. These serve often as a sort of pocket, as all sorts of things can be stuck under them. Leg bands are also common, either just below the knee or above the ankle. These are often woven in place and can not be removed. Ornaments for the ear, the hair, and the neck or breast are very common. Most ornaments are put away, however, until some special occasion, as when making or receiving calls. They are worn on all ceremonial occasions, such as special feasts and dances. Elaborate preparations are made for these occasions; in addition to putting on all sorts of ornaments the face and body are often painted with various colors and designs, red, white, and black being the colors most commonly seen. For red the natives use a natural red clay, or clay is burned to a bright red and then ground into powder. Soot, usually obtained by burning some oily or resinous material, is used for black; and lime, formed by burning shells or coral, for white. These colors are mixed with coconut or some other oil in a shell, coconut shell, or small earthenware paint dish.



Fig. 19. A young, unmarried man from a village near Merauke, in Dutch New Guinea. He wears the characteristic hairdress and ornaments of his group: in his nose a long plug of bone, in his ears rings made from the bases of cassowary feathers, around his neck strings of Job's tears. A stone-headed club is slung over his right shoulder.

Fig. 20. A young, unmarried man from a village near Merauke, in Dutch New Guinea. The nose-plugs and the ear-rings are common adornments in his group. In addition, he wears three special breast ornaments made of shell, kangaroos' teeth, and flattened pigs' tails. A shell fastened to a narrow rattan belt forms his only article of clothing.



Many of the more common ornaments are worn by both men and women. Of the more elaborate ornaments the men claim the greater number, but there are many feminine ornaments also. Where there are age groups, each one has its characteristic ornament or ornaments, in addition to those that may be worn by two or more groups (Figs. 19, 20, 24). Then there are special ornaments that may be worn only by those who are members of certain societies or who have performed certain deeds, such as killing an enemy. In Papua the police have been able to pick out murderers by knowing the local usage in this respect.

Of this latter custom Sir Hubert Murray, Lieutenant-Governor of Papua, says: "Vanity is a very frequent incentive to crime, and men, and more often women and children, are killed in order to win the right to wear certain ornaments that are the insignia of the assassin. These ornaments vary, as might be expected, in different parts of the territory, but the beak of the hornbill is recognized as a badge in more districts than one. Some tribes have no system of badges and never had, though they may have a form of tattooing that is peculiar to men who have taken life, or a certain flower or leaf that is worn as a token of murder."

In connection with special dances and ceremonies the natives may wear not only their regular ornaments, but all sorts of special decorations (Fig. 39; Pl. 2). The head ornaments are often most elaborate structures, usually consisting of a light frame work of bamboo more or less covered with brilliant feathers of various kinds, in New Guinea usually including the bright red and yellow plumes of the bird of paradise. In many dances all the performers may be dressed and ornamented in exactly the same fashion, and will go through elaborate evolutions like a well-trained ballet corps.

The dress and ornaments discussed so far—strictly native and made only of native materials—have almost



Fig. 21. A man from Borbor, on the north coast of New Guinea. His hair is cut short except at the back where rattan is wrapped around it. The rattan cylinder is decorated with a band of fur and two woven bands trimmed with dogs' teeth, shells, and pendants. He wears ornaments in the rims and lobes of his ears; on his arm is a fiber band.

disappeared in many parts of Melanesia. Still something, even if it be only the simpler sort, is left in most places. Even in Fiji European garments have not entirely displaced the native dress. In New Caledonia little of the old remains, and this is also true of parts of the New Hebrides and Solomons. In most places one finds a mixture of European with native materials. The natives of different places vary much in the tenacity with which they cling to old customs and costumes, but on the whole they are rather conservative. European beads are accepted and used by the wild native, but usually scorned by those near European settlements, who have had long contact with white men. In the native villages near Port Moresby and Friedrich Wilhelms Harbor (Madang) in New Guinea, where there are stores filled with all manner of European goods, most of the inhabitants dress in purely native fashion. I have seen a man throw on the ground some beads



Fig. 22. Two married women from a village near Merauke, on the south coast of Dutch New Guinea. Their hair is divided into numerous separate strands, each one lengthened with strips of palm leaves. Several strands are fastened together with a tassel of coconut fiber, and then these bunches are passed through pieces of hollow bone and strips of leaves are added.



Fig. 23. Men preparing small boys for initiation ceremony. Near Merauke, on the south coast of Dutch New Guinea.

I gave him as a gift. In parts of the New Hebrides it is much the same, and it is not because they have nothing with which to buy European stuff, for they have plenty of money received from the sale of their coconuts.

Hairdressing

The hair of the Melanesians is usually stiff and curly. The most common way of wearing it is to comb it out so it stands up stiffly all over the head, and then trim it evenly over the surface. It may be cut short, or cultivated to considerable length, in which case it demands much care and attention to keep it in good condition; hence the use in many places of wooden head-supports or pillows. These elaborate heads of hair belong to the men, as the women's hair is usually cut short. This bushy type of hairdressing had its greatest development in Fiji in the old times, but the present styles are less extreme (Fig. 44, *a*).

Sometimes the hair is allowed to grow in small curls or ringlets, several inches in length, which hang down over



Fig. 24. Man from village near Merauke, on the south coast of Dutch New Guinea. The man has large pieces of bamboo in the sides of his nose, and his face is painted with white lines.

the back and sides of the head. The curls are often anointed with oil and red clay (Fig. 17). They may be lengthened by attaching strips of fine bark or fiber to each ringlet, as is done on the south coast of Dutch New Guinea (Figs. 19, 20, 22). In other places in New Guinea the hair is gathered into a few bunches, and each bunch wrapped and lengthened with bark or fiber until the man looks as if he had a number of sticks or clubs fastened to the back of his head. Near the mouth of the Sepik River the hair is drawn together at the back of the head and over it is placed a stiff cylinder of rattan from four to eight inches long, usually just long enough for the hair to project a little at the rear, where the opening is slightly smaller than at the other end. This cylinder is ornamented with fur, feathers, shells, and pendants of various kinds (Fig. 21). Farther west the men allow the hair on the top and back of the head to grow into a sort of mat that sometimes hangs down below the shoulders. In the mountains north of Huon Gulf the hair is massed on the top of the head, wrapped in leaves and enclosed in a sort of net or string bag. There are many other local variations in hairdressing. While the hair is normally black, it is often bleached a light yellow or brown by rubbing lime into it, a process having sanitary value also.



Fig. 25a. A child's head, wrapped with strips of bark to elongate the skull. These bandages are worn from six weeks to two months. Arawe, on the south coast of New Britain.



Fig. 25b. Children with heads bandaged to elongate the skull.

The children usually have the hair cut short, but often the head is shaved in places, allowing the hair to grow in various shapes and patterns (Fig. 23). Shaving may be done with a sharp shell, a flake of obsidian, a sharp-edged blade of grass, or a piece of bamboo.

The hair on the face is usually pulled out. It is caught between the edges of two pieces of shell or bamboo, or twisted between two rather stiff fibers fastened together at one end, or pressed against the rough surface of a piece of pumice with the thumb or finger. The old men frequently allow their beards to grow. These are of moderate size and length, neither large nor particularly scanty in development. Sometimes only part of the beard is allowed to grow, custom varying in different localities.

Tattooing

There is little tattooing practiced in Melanesia. Nevertheless, a certain amount, especially on the face, is found in many different localities. It is more common on women than men and is often connected with puberty rites. It is often a prerequisite to marriage. Tattooing is most highly developed in southeastern New Guinea, where the population is fairly light-skinned. In many places, especially among the darker-skinned peoples, scarification is practiced, either by burning or by cutting and inserting some foreign substance to prevent rapid healing. In the western Solomons the face and upper part of the body are decorated with rows of circular or oblong raised cicatrices. Around Humboldt Bay in Dutch New Guinea the women often have their shoulders and backs ornamented with huge spiral cicatrices or welts, sometimes as large as one's finger. On the southern coast the women may have large welts forming irregular short lines, crosses, arrows, and curves, almost covering the body. This is done before marriage, apparently merely as ornament, and the girl may have as much or as little as she desires. The cutting is done with sharp pieces of shell, and vari-

ous substances are rubbed into the cuts to cause the cicatrix to form.

Piercing of Ears

Practically everywhere the lobe of the ear is pierced and the opening enlarged to receive all sorts of ornaments. Sometimes a heavy weight is used to stretch the lobe and enlarge the opening. Holes are also sometimes made around the upper and outer edges of the ear. The septum of the nose is usually pierced, often the sides also (Fig. 24), and occasionally, as in the Solomons, a hole is made in the tip of the nose for an ornamental plug of bamboo.

Deformation of Skulls

Deformation of the skull is not common, but in southwestern New Britain the heads of the young children are tightly wound with a strip of bark cloth, which causes the skull to elongate upward and backward (Fig. 25). In southern Malekula a similar deformation is brought about by keeping on the child's head a sort of woven cap, which prevents the head from enlarging sideways.

Weapons and Warfare

Common Weapons

The most important weapons of the Melanesians are clubs and spears or bows and arrows, with daggers and slings as supplementary weapons in many places. The spear and the bow and arrow are seldom used in the same region, but either one or the other is found practically everywhere. In many places, as in Fiji and parts of the New Hebrides, the club might be regarded as the most important weapon, but this depends largely on the method of fighting. In addition to heavy two-handed clubs, shorter and lighter clubs are frequently carried and used as throwing clubs.

Weapons—New Caledonia

The weapons of the New Caledonians are spears, clubs, and slings. The spears are rather light and are often thrown with the aid of a cord from six to eight inches long, carefully plaited out of fiber. There is a loop at one end through which the first finger is passed, and a knot on the other end to hold it around the spear until the spear has been thrown. The cord does not add to the force with which the spear is thrown, but gives it a rotary motion.

The New Caledonian clubs are rather short and light, not long and heavy like the Fijian—not much larger, in fact, than the Fijian throwing clubs. They usually have a knobbed or pointed head, the point being rather long and projecting on one side so that the end looks something like a bird's head and beak. One variety has a disk-shaped head of serpentine or nephrite, sometimes

nearly a foot in diameter, set edgewise in the end of the handle and fastened with cord.

The New Caledonian sling has no pocket but only a double string at the bottom. The sling stones are ground to the shape of a double cone pointed at each end. Each man carries a number of these in a netted pouch fastened around his waist.

Weapons—New Hebrides

In the New Hebrides I found a great variety of spears and clubs, though bows and arrows are the chief fighting weapons in many places and slings are fairly common. The arrows and spears are often tipped with bone and one type of Santo spear fairly bristles with bone points. Human bone is usually used. The arrow points are often smeared with a viscous mixture put on with magic rites and believed by the natives to be poisonous; it is probably only slightly so, if at all. If the wounded man believes the arrow to have been poisoned, the effect is much the same as if it had been. Human bone, especially if it comes from a famous warrior, is believed to add to its efficiency. The arrow shaft is made of cane, with a head or foreshaft of hard heavy wood to which the bone point, if present, is attached. In most of the northern islands bone tips are used, while in the southern islands these are lacking, the wooden head being either plain or barbed. Feathered arrows, unknown elsewhere in Melanesia, are made by some primitive mountain tribes of West Santo.

The bows of different regions vary from about three and one-half to six feet in length. In Malekula and some neighboring islands a peculiar S-shaped bow is used, one end being recurved and much more slender than the other. This bow is made from the root of the mangrove. Bow strings are of twisted bark fiber. A wrist protector of wood or heavy coiled rattan is often worn.

The clubs are of wood, with flattened, rounded, or star-shaped heads. They vary greatly from island to

island, though several different types may be used in one region. They are sometimes provided with a short loop of heavy cord or rope by which they can be slung from the shoulder.

In the Santa Cruz Islands the bow and arrow is the fighting weapon. The arrows are similar to those of the northern New Hebrides but larger and heavier, with characteristic designs.

Weapons—Solomon Islands

Spears are the most important weapons of the Solomon Islanders, though bows and arrows are extensively used, especially in the western islands. Clubs of many kinds are also in use, especially in some of the central and eastern islands, where they often serve as a sort of shield to ward off spears and arrows. Slings are known in some places, but are not much used.

The spears and arrows of the western Solomons are notable for the great number of small slender barbs, made of splints of wood or bone fastened to the head by a fiber wrapping, usually colored white toward the point. Occasionally the whole shaft of the spear will be covered with a red and yellow wrapping. These are sometimes called "king spears." Similar barbs and fiber wrappings are used in the central and eastern islands. Colored fiber wrapping is also common on bows and clubs. The bows are usually made of palm wood and are about six feet in length. The string is twisted bark fiber sometimes carefully wrapped, especially near the center. In the western islands the string is kept away from the bow by means of a short block of wood one or two inches in height fastened to the bow under the string at one end. A bow-string protector, made by coiling a long strip of bark, is often worn on the forearm.

A rather small shield, made of a layer of cane lashed together with rattan and usually covered with wicker work, is in common use throughout the central Solomons.



Fig. 26. Man with spear and shield, Arawe, southwestern New Britain. The shield is made of three pieces of wood, laced together with rattan. The man has a head-dress of cassowary feathers, and holds in his teeth a woven rattan strip ornamented with shells and boars' tusks. This is to frighten the enemy. When not so carried, it is worn on the breast or back.

Wooden shields are sometimes used in the eastern islands. A thick or folded piece of bark cloth hung over the shoulder is sometimes used as protection from arrows and spears.

Weapons—New Ireland

From New Ireland throughout the Bismarck Archipelago to the Admiralty Islands the spear is the most important, and in some places the only, weapon. In New Ireland and New Britain, clubs are much used. Slings are also common in places. A short dagger, usually with an obsidian blade, is found in the Admiralty Islands. The spears used are of many kinds, from light wooden

darts hardly larger than arrows to long, heavy, wickedly barbed spears or lances. Sometimes the shaft is of cane or bamboo, often decorated with designs. St. Matthias spears are particularly notable for their carved designs and decorations. The Admiralty Island spears, as well as the daggers, usually have long sharp points of flaked obsidian.

Wooden shields, usually decorated with carved and painted designs and rattan wrapping, are used throughout central and western New Britain (Fig. 26). Those of western New Britain are made of three pieces lashed together with rattan.

Weapons—New Guinea

In the eastern coastal region of New Guinea the spear is the most important weapon. Its distribution is much the same as that of the Melanesian languages. In most of the remainder of the island the bow and arrow holds first place, but spears are also in use in many regions. Clubs are very widely distributed. They are made of wood or have wooden handles with stone heads. Stone-headed clubs are made in the mountains, especially in the eastern part of New Guinea, but are traded to the neighboring coastal peoples. The stone heads have a hole in the center through which the handle is passed. They are of various shapes, a flattened circular disk with sharp edge being the most common. Other heads are more or less spherical or cylindrical with rounded ends or they are star-shaped with a varying number of sharp points. There are also all sorts of rounded forms with a number of rows of knobs or points on the surface. The latter are known as "pine-apple" clubs. Most heads are symmetrical, well made and nicely polished, but rough and irregular ones are also found. Fine stone-headed clubs are highly valued and are often decorated with plaited rattan bands and feathers. The wooden clubs vary greatly according to the place of manufacture. Many are finely decorated with carved and

incised designs. A special sharp-edged wooden club and a bamboo knife are used by many head-hunting tribes.

Spears are of many kinds, and are also decorated with carved or incised designs. The fighting spear usually has a many-barbed head which is sometimes made of a separate piece of wood attached to the shaft. Bamboo heads are also common, but these are used chiefly for hunting. The spears are usually rather long and heavy, but a light spear with bamboo shaft and wooden head, thrown with the aid of a throwing stick (Fig. 27), is in use in the region near the mouth of the Sepik. The throwing stick is of bamboo, with a carved wooden side support for the spear tied on near the handle end. Spears with bamboo shafts are also found in other regions.

Arrows usually have a cane shaft with a wooden or bamboo head. To the wooden head is sometimes added a bone tip. The claw of the kangaroo or cassowary is also used as a tip. In the interior mountains flint points are sometimes used. The wooden head may be slender and smooth, but is usually cut so as to furnish it with barbs of various sorts. The shaft is not feathered or

Fig. 27. Man ready to throw spear with spear-thrower. The spears are made of bamboo with long, slender, wooden heads. Awar, Hansa Bay, on the north coast of New Guinea.





Fig. 28. A cuirass of heavy coiled rattan, obtained at Leitene, on the north coast of New Guinea, from natives who had taken it in a village half a day's journey inland.

notched at the rear. Every district has its own peculiar type and style of decoration, so the variation is almost infinite. The best and most elaborate arrows are made by the interior tribes. These are often traded for considerable distances.

Bows are made either of wood, usually palm wood, or of bamboo, the latter being found chiefly along the southern coast. A strip of split cane or rattan often serves as bow string, and a small thick ring of plaited rattan fiber is often fitted near each end of the bow to prevent the string from slipping. The wooden bows, especially on the north coast, are often decorated with incised designs and plaited

Fig. 29. Ornamented wooden shield from Sepik River, in northern New Guinea.



fiber bands. Bows vary considerably in length in different parts of the island, those in southern New Guinea sometimes reaching a length of seven feet. In this region wide bow-string protectors of plaited rattan are commonly worn. Bone daggers, made usually from the leg bones of the cassowary, are found in many places, especially on the north coast. They are often carved and ornamented with incised designs. Slings are used in some places in eastern New Guinea and the neighboring islands.

Shields are used in many regions, especially where the spear is the principal weapon. Wide and rather heavy bark belts are worn on both the north and south coasts;

a small heart-shaped rattan shield, worn on the breast, is found in the Berlin Harbor region, but this is more for ornament than protection. A rather heavy stiff cuirass of rattan (Fig. 28) is apparently in use in the interior near the upper Fly and Sepik rivers, as specimens almost identical in construction have been obtained from both the north and south sides of New Guinea near the Dutch border. In both places they were said to come from inland. A somewhat simpler rattan cuirass has been found farther west in the Dutch territory. In the interior north of Huon Gulf a sort of cloak made of several thicknesses of bark cloth is worn as a protection. This hangs over the back and shoulders down to the knees.

Shields of bark and skin have been reported from the interior, but the usual shields are of wood. These are most common along the north coast from the Dutch border eastward. They vary greatly in size, shape and decoration. From Attack Harbor to the neighborhood of Berlin Harbor they are more or less rectangular, and often very large and heavy. Farther east as far as Potsdam Harbor they are slender, often with a face carved near the top and a fringe of fiber on one side. Somewhat similar shields are found on the Sepik River (Fig. 29). Inland from Potsdam Harbor and on Vulcan Island is found a medium-sized rectangular shield of heavy wood with a face carved in relief near the center. Around Astrolabe Bay the shields are circular, and around Huon Gulf they are rather long and made of thin wood with the top bent over. Rattan-covered wooden shields are found on Dampier Island and the northeast coast of Papua. Partly covered ones occur on the southeast coast. The Trobriand Island shield is made of thick, light wood, painted with characteristic designs. In the Papuan Gulf a light rectangular wooden shield is used with the bow and arrow. It is slung from the left shoulder and has a notch at the top for the arm, which must be free to hold the bow. Shields are rare in Dutch New Guinea, but they occur on both north and south coasts.

Head-Hunting and Warfare

Throughout Melanesia life was never secure until the white man's government was established. While the members of a large conquering tribe might feel safe, the smaller groups lived in constant fear of attack. Whole villages were often wiped out, only the children being saved and adopted by the conquerors. Where the groups were more evenly matched there was still the fear of unexpected attack, even in times of nominal peace. Hence in most places every man carried arms when he left the village, even to go to his garden; the women carried the burdens, leaving the men free to fight.

The causes of war were many. There were head-hunting tribes who were always on the lookout for victims and organized extensive raids when the need for fresh heads arose; for, according to their ideas, new heads were absolutely necessary on certain occasions. The Marind-anim, or Tugeri, near Merauke in Dutch New Guinea, were in the habit of giving their children the names of enemies who had been killed in a head-hunting raid. When the Dutch began to suppress head-hunting the tribe complained bitterly that all the children were growing up without names, and could never take their proper places in society.

Head-hunting was common in southern New Guinea in the Fly River valley and neighboring coasts. In parts of this region the skin of the head and neck as well as the skull was preserved. After the skull had been cleaned, the neck and fleshy parts were built up with rattan and fiber, and over this the skin was placed (Fig. 30). These reconstructed heads were of great importance in some ceremonies. In other places only the skull was preserved. It was usually decorated or ornamented in various ways, depending on the locality. Head-hunting was general only in southern New Guinea and the central Solomons.

Even where head-hunting was not in vogue, the killing of an enemy or of almost anybody, in fact, was regarded

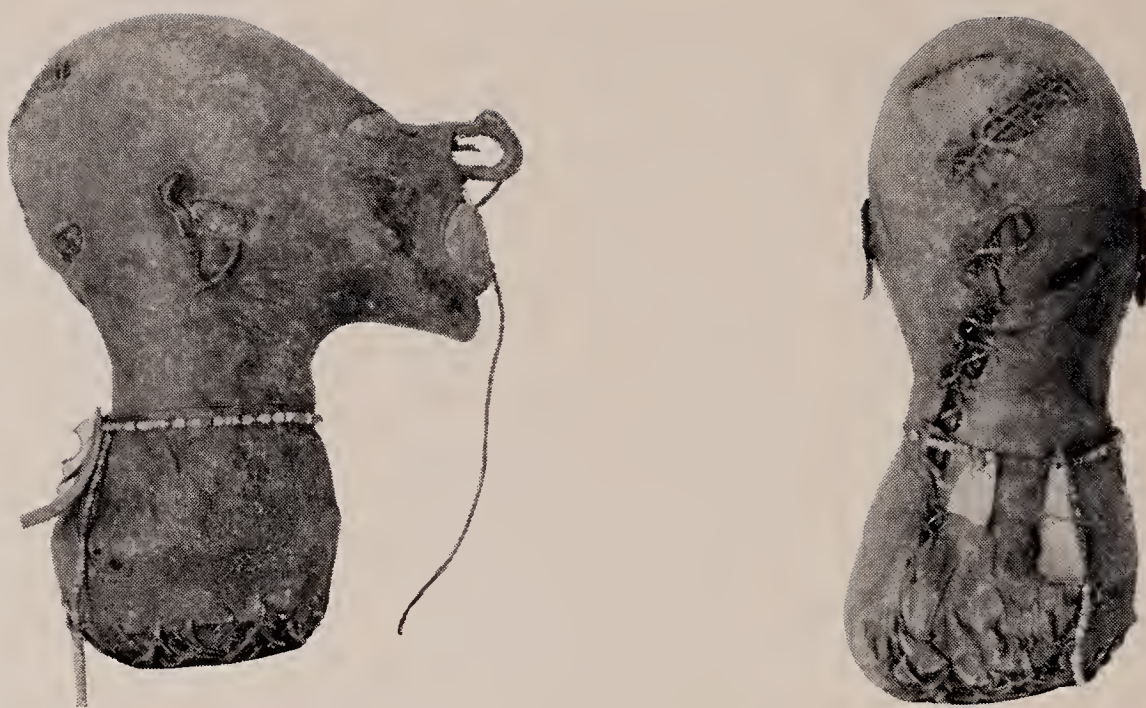


Fig. 30. Side and rear views of a specially prepared and preserved trophy head with skin. Fly River valley, Papua.

as a praiseworthy act, and one that was necessary in order to acquire standing in the tribe, particularly with the women. Here was a cause of many raids by the young men, who wished to stand well with the girls as well as with their parents. Women were often abducted from other communities, either with or without their consent. As Helen caused the Trojan war, so a woman was at the bottom of many wars in this region. In fact, women probably caused more fighting than any other one thing.

Another cause of trouble was the death of some individual, the cause of which was ascribed to the evil magic of some member of another village or community. This called for immediate vengeance—a life for a life.

Living thus in an atmosphere of warfare—either fear of hostile raids or preparations for an attack on some one else—one might wonder how any people survived and lived in apparent enjoyment of life. As already mentioned, some groups did suffer almost complete extermination, but war was seldom carried to that extremity. There was much shouting and boasting, but as soon as any one

was killed, or even badly hurt, the others rapidly got out of harm's way. A truce was called, the score was balanced by suitable payments, and peace was patched up again with all the enjoyable feasting and ceremonies that belonged to such occasions. In fact, fighting added zest to life.

Conditions varied, of course, in different regions. Peace was not always so easily made and hostilities might continue indefinitely. Some groups were always unfriendly, and a permanent state of war was recognized. In many cases the fighting was carried on only at certain times or in certain places and according to definite rules based on long-established custom. Sometimes war was declared formally, with much ceremony, but the sudden surprise attack or ambush was the rule.

In parts of Fiji, the Solomons, and New Guinea many villages were protected by stockades. Deep ditches were also dug, sometimes through the village, so that if attacked on one side the defenders could retreat to the other. Pitfalls were dug around the village, with sharp stakes at the bottom. Short, sharp-pointed sticks were carefully concealed in the paths, and, in fact, everywhere around the place, leaving free a tortuous course known only to the inhabitants. For protection villages were built on almost inaccessible hilltops or mountain spurs, on piles in the quiet waters of lakes and bays, or sometimes on small islands offshore.

Magic in Warfare

With the Melanesians, as with other primitive peoples, the supernatural must always be considered. For every expedition the proper ceremonies must be performed, the omens must be right, the signs favorable. Many weapons have their guardian spirits whose aid must be properly invoked. Magic charms protecting the owner from harm are usually worn or carried somewhere about the body. After the fight and the return home, the proper forms and

ceremonies must always be observed. If the fighters have suffered loss or defeat, they decide that something must have been wrong with their interpretation of the omens, and determine to be more careful and observant next time.

Tools and Manufactures

One of the surprising things about the Melanesians was the excellence and beauty of many of their manufactured articles, especially when we consider the simplicity and crudeness of their tools. Their wood work was particularly notable. The thick forest was cleared for their gardens; large houses with huge posts and heavy beams, often elaborately carved, were constructed; fine canoes, often with beautifully carved prows, were cut out of logs; large wooden drums were hollowed out and ornamented; wooden dishes were manufactured in all shapes and sizes, up to huge circular bowls over four feet in diameter, with curiously carved handles—all accomplished with a piece of sharpened stone set in a wooden handle, with perhaps the aid of a sharpened clam shell or boar's tusk for the finer work and finishing touches. Yet better work was usually done with such simple tools than with the iron ones that most of them have now acquired.

By no means could everyone do this kind of work, and the natives thoroughly appreciated and valued fine work. In one village I happened to see an excellent old wooden mask, and asked the owner to sell it. This he refused to do, saying: "Me no sell 'im. Old fellow man he savy make 'im. Me fellow no savy make 'im. Old fellow man he die finish. S'pose me sell 'im, no got."

Division of Labor

The best work was limited to definite villages or districts and even to certain individuals, but this division of labor included only the arts that were more highly developed. Ordinary articles of clothing, simple ornaments,

plain mats, baskets, and the common articles of daily life could be made in every village and by most individuals. When it came to more elaborate work, however, each village or district had its own article or articles of manufacture, and a more or less regular system of trading was the result.

Materials Used in Manufactures

They had no metals and were largely surrounded by forests, so wood-working was most important, and a large portion of their possessions was made of wood. Wood-working tools were stone and shell axes, adzes and chisels; knives and scrapers made of shell, flint, or teeth, especially of boar's tusks; and bow or pump drills, tipped with a tooth, a piece of flint, or some other hard substance. Not all of these were known or used in every region. Usually there was in use only a single type of stone or shell ax or adze, and a small carving tool of shell, bone, tusk, or tooth.

Tools of Shell and Stone

Shell ax-blades, usually made from the large *Tridacna* shell, were commonly used in the smaller islands and in places along the coasts of the larger ones. The *Tridacna* shell is thick and tough, so the blades kept an edge and did not break easily. Other shells were sometimes used for adze blades, especially a spiral shell such as the *Terebra* used in St. Matthias and some other places. This was cut away on one side toward the larger end, leaving a curved and rounded edge suitable for cutting out grooves and hollows. These blades were often very small, an inch or even less in diameter.

Stone blades were usually made out of some fine-grained, tough volcanic rock such as diorite. Jadeite axes were found in New Caledonia, New Hebrides, and places in New Guinea. The stone blades were usually nicely ground and polished, but sometimes they appeared to be

merely waterworn pebbles of suitable size and shape, ground to an edge on one end. They were of all sizes, from small ones not much over an inch in length and half as wide to large heavy blades a foot long. The average size was from three to six inches in length, somewhat flattened, and with rounded sides and rear. Some of the Bougainville axes were long and slender. The edges of all axes were more or less rounded. The blades from New Hanover were long, slender and hollow-ground, suggesting an imitation of the *Terebra* shell adze. The blades were either fastened directly to the handle or to a separate holder which was then attached to the handle so that it could be turned around; thus the blade could be set at any angle. When attached directly to the handle the blade could be set with the edge parallel to the handle, forming an ax, or crosswise like an adze. The blade was lashed on with cord or rattan.

Generally the handle was cut from a tree so as to include a piece of the trunk or a large limb with a side branch forming the proper angle for the handle. The larger end was cut and shaped to receive the blade or the holder in which the blade was fastened. Occasionally, as in the Humboldt Bay and Papuan Gulf regions of New Guinea, the holder was passed through a hole in the end of a straight handle. In parts of southern New Guinea the rather large stone blade was wedged into a hole in the tough root end of a bamboo stalk, which was cut off the proper length for the handle. The blade projected on one side like an ax. Wooden handles with thick, tough, lower ends were also used in the same way.

In Bougainville and central and western New Britain a piece of heavy, split rattan was doubled one or twice around the blade, and the ends were tied together to form the handle. In such a case the blade might be grooved where the rattan was wrapped around it, as was the case with some of the Bougainville axes.

For fine carving, engraving, and finishing, the boar's tusk was the most common tool. The end might be

ground to a sharp triangular point, or the edge sharpened to make a knife or scraper. A wrapping of rattan might be added as a handle. A good engraving tool was made out of part of the lower jaw of a small animal, with the hard, sharp incisor teeth still in place. The jaw was wrapped to form a handle, and the teeth were sharpened to a fine cutting edge. Sometimes a bone chisel with a wooden mallet was used. A piece of sharpened shell could also be used for fine work. The incised designs on bark belts were usually cut out with an instrument of this kind.

Wood-Carving

Wood-working was the most important industry. The small amount of stone work, chiefly the making of stone axes and club heads, was done by pounding, pecking, and grinding with other stones, sand and water being sometimes added in grinding. This work was done chiefly in the mountain regions of the larger islands, especially Bougainville, New Britain, and New Guinea. The stone figures found in a few localities were usually made of soft stone, easily worked with stone tools.

Drilling

Shell was worked in much the same way, being pounded and ground into shape, though the holes were usually bored rather than pecked. While axes, knives, and spoons were occasionally made of shell, its most important use was for ornaments. Strings of small disks were also used as money in many places. The holes in the small disks were bored with a sharp-pointed piece of hard stone, such as quartz or flint, tied to the end of a wooden rod. In some places, as in northern New Ireland, this was slender and twirled between the hands, but usually it was thicker, and the whirling motion was given by means of a cord fastened in the middle to the top of the upright, and at each end to the ends of a stick a foot or more in length. The cord was considerably



Fig. 31a. A woman boring a shell arm ring with a large bamboo drill. She wears mourning and around her neck are relics of the deceased. Angel Island, Berlin Harbor, north coast of New Guinea.



Fig. 31b. A woman boring small shell rings with a pump drill. She wears a mourning cap. Kirau, on the north coast of New Guinea.

longer than the stick to which the ends were attached, so that it would coil around the upright or drill when this was turned around. This upright also had fastened to it some heavy object—a piece of wood, or a coconut filled with stones—to serve as a weight and flywheel. The upright was first turned around by hand until the string was twisted up tightly, then by pulling down on the cross stick the string was uncoiled, giving the drill a whirling motion, which continued, because of the weight, after the string had been unwound, and wound it up again the other way. Another downward pull set it whirling in the opposite direction. Thus with an up-and-down motion of the crosspiece, the drill was kept whirling back and forth. On account of the up-and-down motion of the hand, this kind of drill was called a pump drill.

The pump drill was also used in northern New Guinea for boring holes half an inch or so in diameter in the shell disks and rings used for ornaments in many places. As the hole was fairly large, however, instead of a stone point a short piece of bamboo was slipped over the lower end of the upright. This was hollow and it bored out a small core. Sand with a little water was used to make it cut (Fig. 31, *b*).

Manufacture of Shell Ornaments

In the Berlin Harbor region large arm rings were manufactured out of *Tridacna* shell and bored with a bamboo drill sufficiently large to make a hole the right size for the finished ring. This was too large for a pump drill, so a piece of bamboo about three feet long and the proper size was taken and twisted back and forth by hand. A stone was fastened to this for a weight. This stone, or a short stick lashed to the bamboo, was used as a handle to work the drill. The piece of shell was first roughly knocked into shape and then ground on each side on a flat grinding stone. To keep it from turning when being bored it was wrapped with rattan and set or bedded in a rough

hollow in a piece of wood, which lay on the ground during the boring. After the hole had been bored the outer side was ground into shape on a large stone. The large core was sometimes bored with a smaller drill to form another smaller ring (Fig. 31, *a*).

In the Solomon Islands another method was used. First a hole was pecked in the roughly rounded and flattened piece of shell. This was to one side, where the edge of the large hole would come. Through the small hole a narrow strip of rattan or bamboo was passed and fastened to each end of a bent piece of wood like a bow. This was weighted with a stone and used like a fret or scroll saw, with sand and water, to cut out the central core.

While crude shell ornaments might be made in almost any place where suitable shells could be obtained, the better-made ornaments, including shell money, were made only in certain definite localities. These were usually small islands lying near the larger ones, where shells were plentiful but garden land limited. Not every such island worked in shell, however. Of the four islands in Berlin Harbor one (Angel) specialized in large shell arm rings, another (Seleo) made arm rings and smaller shell ornaments, a third (Ali) made canoes, large and small, while the fourth (Tumleo) manufactured earthen pottery. Some forty miles to the eastward one other island (Tarawa), out of several in the neighborhood, made the large arm rings. To find another manufacturing center for arm rings one had to go hundreds of miles to the east end of New Guinea, where in a few special localities in the Trobriands and at Mailu on the south coast, arm rings were also manufactured, but from a different shell (*Conus*), which did not require boring. Even with these rings the finishing was usually done at a different place from where the rings were first made. Nowhere else in New Guinea were shell arm rings manufactured, but there were a number of centers in other islands, each having its characteristic product. Other kinds of shell ornaments also had manufacturing centers. Shell work was usually women's work.



Fig. 32a. Making pottery on Yule Island, on the south coast of Papua. The clay is worked by hand into the general shape of a pot. The stone and wood paddles to be used later are lying in the background.

Pottery

Another important industry is the making of pottery which is also limited to certain definite villages or centers, very frequently small islands near the shores of the larger ones. This industry has suffered very little from European contact and in most places pottery is still made as in the olden times. All pottery work is done by the women.

The tools or implements used depend somewhat on the method by which the clay is worked into shape. In all cases the vessel is built up entirely by hand, as the potter's wheel is unknown. The vessel may be worked out of a single lump of clay or it may be built up by uniting a number of pieces or rolls. In either case, while being worked, it is usually supported by a piece of an old pot, a coil of bark or leaves, or half a coconut shell. Sometimes the woman may hold it in her hands or rest it on or between her legs.



Fig. 32b. Making pottery on Yule Island, on the south coast of Papua. The women are using paddles to beat the pots into final shape.

The clay is dug out with a stick from some neighboring flat or hillside, carried to the village and pounded up. If it is mixed with stones or grit, the coarser particles are removed by hand; if it is fine, sand is often added. When wanted for use, the clay is worked with water to proper consistency. Where the first method is in use, the proper amount of clay to form a single pot is taken and well mixed, finally forming a rounded mass from which the pot is formed. Either with the hands (Fig. 32, *a*) or by means of a rounded stone, the mass of clay is roughly hollowed out. It is then worked into shape with the stone held on the inside with one hand, and a wooden paddle used with the other (Fig. 32, *b*). If it becomes too thin in any place, a piece of clay may be stuck on and beaten into place. While the finishing is done with stone and paddle, the amount of work done only with the hands varies in different places. At Port Moresby, according to Turner, the vessels are made in two pieces, the bottom

and the mouth, "worked into the required shape by means of the fingers," and molded and beaten together with the stone and paddle. Some water is kept in a vessel near-by to moisten the paddle and clay as needed. No other tools are necessary to complete the pot, though a rounded stick may be used to form the rim and a sharp-pointed stick or piece of bamboo to make incised designs.

The built-up pot is made in a number of ways. The Port Moresby method of making the pot in two pieces might be regarded as the simplest. I observed a more complicated method in Fiji near the mouth of the Sigatoka River. Three lumps of clay were taken and beaten out flat. One was then worked into a saucer-shaped form, and the other two were set on the edge of this, and bent around to form the two sides of the pot. The pieces were all beaten firmly together and worked into the general form of the pot, leaving an opening at the top only large enough for the arm. A circular piece was then cut out of the side, and beaten in place over the opening on top. This was to be the bottom of the finished pot. The hole was cut to allow the stone to be held inside. The pot was then allowed to dry till the new bottom became fairly strong, when it was turned over, the old bottom cut out, the hole in the side covered, the body given the final touches, and the new top and rim finished. In most places in Fiji the pots, or at least the smaller ones, are beaten out of a single mass of clay. At Na Sava, however, they were built up of large rolls like sausages, and beaten into shape with stone and paddle.

In Bougainville Straits, according to Guppy, the bottom of the pot is first beaten out of one piece of clay. Other pieces are beaten into thin flat strips about an inch wide and six to twelve inches long, depending on the size and height of the vessel, and these are added to the base, one above the other. Then the pot is beaten and worked into final shape with stone and paddle.

In Mailu, on the south coast of Papua, the pot is built up of rolls of clay one-half to three-quarters of an inch

thick, made by rolling the clay between the hands. Half a coconut shell is used as a support, and the first coil started about halfway up its side. After reaching the edge of the shell, the sides are built up nearly straight, but widened somewhat, until the pot is sufficiently wide. At this time it does not in the least resemble the finished article, being merely a slightly flaring hollow cone open at the bottom. All the work so far has been done with the hands, each roll as added being pressed into the others, and the inside and outside only roughly smoothed. The pot is now worked into shape, down to the coconut shell (which is kept upright by resting in a ring of twisted banana leaves), by the hands, in one of which is a piece of shell. With this the surface, both inside and out, is scraped and smoothed until all signs of the original coiling disappear. The rim is formed of thin rolls of clay and smoothed with the shell and fingers. Designs may be added with a sharp piece of bamboo. The pot, with its coconut support, is now set in the sun, until it is firm enough to be turned over so that the bottom can be finished. This is filled in by pressing out the coils with the hand and beating the bottom into shape with a small wooden paddle, more clay being added if necessary. No stone is used, the hand alone serving to shape the inside of the vessel.

In Laukanu, a small island in Huon Gulf, the pots are made entirely by hand (Figs. 33, 34). No implements, not even a ring support, are used. The clay is worked into thick rough rolls by squeezing it in the hands. A thick, pointed bottom is made from the first roll, and others are added to build up the pot, more or less in the form it finally assumes. Both inside and outside are worked over and smoothed by hand. To make the incurve toward the top, the rolls are made much smaller, and carefully rolled out between the hands. Designs may be formed on the surface by small thin rolls pressed into place with the fingers. At first the beginning pot is held in the lap, but when it gets larger it is placed on some leaves in a hole in



1



2

Fig. 33a. Making pottery in Laukanu, a small island in Huon Gulf. Here the pots are made entirely by hand from clay worked into thick rolls. 1. The woman is shaping the bottom of the pot from the first roll of clay. 2. After the base has been formed it is placed in a hole in the ground for support while the sides are built up.

the ground. The finished pot is pointed at the bottom and is thick and heavy.

In Sissano and neighboring regions on the mainland of northern New Guinea the pots are rather thin and fragile. They often show on the outside the marks made by pressing the coils of clay into place with the thumb. Only the first stages of manufacture were observed. The clay was rolled out on a smooth surface into thin even rolls not much larger than a lead pencil. The first coil was tightly rolled or coiled into a saucer-shaped disk, which gradually curved upward as the other rolls were added. The inside was carefully smoothed by hand, the outside not so carefully.

The Tumleo pots of Berlin Harbor are made with stone and paddle, as first described, from a single mass of clay.



3



4

Fig. 33b. 3. Pressing a large roll of clay into place. 4. The woman has now smoothed the pot with her hands so that the separate coils can hardly be seen, and is squeezing another roll of clay into shape. (See Fig. 34.)

All pots are allowed to dry for a few days before being fired. When ready they are usually placed, singly or several together, on the ground, and grass, leaves, and small sticks of wood are placed around and over them. If not sufficient, more wood and leaves are added as the burning proceeds. Sometimes the pot may be merely placed on top of the fire, and turned over as needed to burn all sides. A pair of long sticks is used to handle the hot pots and arrange the fire.

The pots are usually more or less irregularly burnt and are easily broken. No glaze is used, but a shiny surface is sometimes given by rubbing the surface when hot with a piece of gum or rosin.

As with other manufactured objects, each pottery center has its own type, which is usually characteristic and easily distinguished. In some places only a single form, varying somewhat in size, is made. In others there are



5



6

Fig. 34a. Making pottery in Laukanu (continued). 5. The woman presses another roll of clay into place. 6. The pot is now larger, but the rim has been turned inward, so the woman makes a smaller roll to use in finishing off the top.

many forms, each with its own name and usually used for a particular purpose. Decorative designs may be incised, applied, molded, or painted on the outside or on the inside of the rim. The most elaborately molded and painted pottery comes from the northern part of New Guinea, around the middle and lower Sepik River and some of its tributaries.

Not all pottery is for use. Ornamental pieces are made in several places. In the Mekeo district one frequently sees inverted bowls, nicely ornamented on the rounded surface and with a pierced projection in the middle by means of which they are suspended.



7



8

Fig. 34b. 7. The smaller roll of clay is added. 8. The pot has been smoothed, inside and out, and the rim finished. The woman presses thin rolls of clay onto the outside of the pot in a decorative design, and the job is done. The pot was made in less than half an hour.

Weaving

In Melanesia weaving is done only in a few islands showing strong Micronesian influence, such as the Santa Cruz group, St. Matthias, and a few small outlying islands north of the Solomons. A simple loom similar to the Micronesian loom is used. The rather narrow woven strips are in most places made of banana fiber and are used for clothing and bags, several being fastened together where necessary. Designs in color are often woven in, the Santa Cruz work being specially interesting.

Except for this, everywhere in Melanesia all objects made out of strips of leaves, bark, or fiber of any kind are

plaited or put together by hand. The only implements used are a sharp-edged cutter, generally of shell or bamboo, to cut and split the leaves, and an awl or needle of wood or bone to make the holes or sew the strips of leaves together. A beater of wood, occasionally of stone, is often used to soften the material, especially the strips of bark used for clothing. This bark is always beaten out until it is soft and pliable.

Most mats and baskets are plaited out of strips of long leaves, such as coconut and pandanus. The simpler and cruder ones are made almost everywhere, the more elaborate and special types only in certain localities. Kirau, near the mouth of the Sepik in northern New Guinea, is a center for the manufacture of large sleeping bags and flat soft carrying bags, often nicely ornamented. These are made of tall reeds, four to six feet long, beaten flat and soft with a wooden club. Strips of dyed bark are usually plaited into the hand bags to form designs, and fine fiber fringes are added on one side for ornament. Raised ridges and knobs are also often used for ornament. These bags are traded to near-by villages and are used extensively throughout the neighborhood, but they seldom get more than a hundred miles away.

Fine mats are used for clothing in some places. In the northern New Hebrides, especially Aoba, such mats are made of fine strips of young pandanus leaves and often have beautiful open work designs at one end. When first woven they are almost white, but they are usually stained with red geometric designs on one side.

Baskets and Bags

Baskets or bags of some kind are found everywhere. The simplest and commonest sort is made of a piece of a coconut leaf. The midrib is split, and the leaflets on each side are plaited together. These baskets are usually for temporary use and are thrown away after serving their purpose.



Fig. 35. Women carrying firewood in string bags. Yule Island, south coast of Papua.

Coiled basket ware is found in the western Solomons, New Ireland, New Britain, and the Admiralty Islands. In the latter group it is made in the form of bowls and large jars and is covered with crushed *Parinarium* nuts, which set into a firm mass, and make the vessels water-tight. The large jars may be three or four feet high.

Throughout a large part of New Guinea the most common bags are those formed of string or cord made from the shredded inner bark of certain trees or vines. This bark is soaked and scraped to cleanse the fiber from other materials. The cord is twisted by rolling it with the hand on the bare thigh, or on some smooth surface like the bottom of a wooden bowl. The bags are made with a handle to go over the head or shoulder, a thickened edge or border around the top, and usually a more or less open mesh, though some of the men's smaller bags are stiff and firm, the strings being tightly drawn together so that the surface often appears ridged.

These bags are not woven or netted, nor are they knitted, though made out of a continuous single cord.

The mesh or stitch used is often called a figure-of-eight stitch, as each stitch or loop is caught around itself as well as in the loops on all sides. In making the bags the end of the cord is passed by hand through these loops, so that, even if the cord breaks, it does not unravel easily. The large bags used by the women for carrying all sorts of objects, from babies to firewood (Fig. 35), are made with a fairly open mesh. A strip of pandanus leaf, around which the stitches of each row are passed, may be used to keep them a uniform size. The string is lengthened, as it becomes necessary, by adding more fiber and twisting it on by rolling it on the thigh in the customary way. Where colored string is used for designs, the fiber is dyed beforehand and a portion of the colored fiber twisted on when wanted. The small shells (Fig. 36) and seeds often used for ornament on the bags are threaded on the string.

The bags carried by the men are smaller than those used by the women, seldom being more than eighteen



Fig. 36. A string bag ornamented with small shells. From Dallmann Harbor, on the north coast of New Guinea.

inches wide and often much smaller. They serve as a pocket in which to keep the various small personal possessions that each man may wish to keep with him. These small bags are often made by men and the stitch may vary considerably from the ordinary figure-of-eight stitch used by the women for their bags.

As with other manufactured objects, each district has its own type of bag. While the stitch is the same, except in some of the smaller bags, there are many differences in the construction of the handle and border, and in size, shape, and ornamental designs. The finer bags are often worn as ornaments, the men wearing them on the breast and the women on the back.

The best string bags come from the interior mountains and are traded to the coastal peoples. It is on the wide coastal plains and river valleys, as, for example, near the mouths of the Sepik and Fly rivers, and along the central southern coast where the mountains are far away, that we find the plaited leaf or reed bag taking the place of the string bag.

Twisted string or cord is also made in many other places and is used for various purposes, such as clothing, ornaments, fish nets and lines, and binding twine. No tools are needed aside from awls or needles; for nets, only net gauges and netting needles are used. There are special centers for the manufacture of the finer articles of clothing and ornaments, but the simpler sorts, as well as nets of different kinds, are made locally.

To the few tools or implements so far mentioned, the following might be added: a paint brush, used in making bark cloth, made of the chewed end of a fibrous reed or a dried pandanus fruit; a pointed stick, long or short, for husking coconuts; a bone knife, used for removing the meat from coconuts and for various other purposes; a heavy pointed stick, used by the men for breaking up the ground when making their gardens, or for opening sago palm trunks; a smaller stick, used by the women in work-

ing the soil, and a sharp-edged wooden club for breaking down grass and weeds; a special wooden or stone-headed hammer for mashing sago; a wooden hammer, occasionally used to tighten rattan lashings; and stones, usually unworked, of different kinds, used as hammers.

Transportation and Trade

Human Transport

As there are no beasts of burden in Melanesia, on land everything must be carried by man. A heavy object such as a pig, a large yam, or a bundle of sago is fastened to a pole and borne by two men. Practically everything else is transported by women on their backs, being carried in string or plaited bags or wrapped in a special carrying band which is used in many places, especially for such objects as grass, long leaves, or firewood. The bag or bundle is supported by a band on the head, and rests on the upper part of the back (Fig. 35). I saw a carrying stick in only a few places in northern New Guinea and the Admiralty Islands, and then it was apparently used for special objects such as water vessels.

The only roads are winding narrow paths through the forest and over the mountains, and they are often excessively steep and slippery. Narrow streams or ravines may be bridged with poles or a small log. Over larger dangerous streams suspension bridges of rattan cables are occasionally constructed in the New Guinea mountains.

As land transportation is so difficult, most trading is limited to neighboring villages or communities, especially between those living under different conditions, such as inland and coastal peoples, whose supply of commodities would be different. In many places there are regular market days and market places. These are chiefly food or produce markets, where either different kinds of food are exchanged or manufactured articles are traded for food. Such markets are more or less neighborhood affairs,

however, and trading between more distant places is irregular and is carried on by special expeditions.

Owing largely to the lack of easy communication, the interior tribes do not seem to have had much to do with each other. Their mutual hostility has already been mentioned. There must have been some trading, however, as valuable objects such as those of shell and stone are found far from their places of origin and must have passed through many hands on the way.

Transport by Water—Canoes

The water offers a much easier means of intercommunication, and as this is a region of many islands both large and small, water transport is of first importance. The usual means is a dugout canoe. In a few places a small raft or catamaran is sometimes used for fishing or short trips, or occasionally two logs are fastened together and a platform is laid on top; but canoes are made practically everywhere. Ordinarily there are several different sizes, which are used for different purposes. They are usually somewhat differently constructed and have special names. There are small private canoes for one person, men's canoes, women's canoes, fishing canoes, often large sea-going trading canoes, and war canoes.

The smaller canoes belong to the individual or family. The large sea-going canoes are usually the property of a larger group. These are made in relatively few places, and are much more elaborately constructed than the ordinary canoes. Usually the making of these large canoes is attended with much formality, and numerous magical rites and ceremonies have to be observed. Aside from the largest Fijian canoes, the only built-up canoes in Melanesia are found in the Solomon Islands and southern New Ireland. Throughout the Solomons all the canoes, with a few minor exceptions, are constructed of hewn planks fastened together. These vessels vary in size from the large war canoes capable of holding forty

or fifty men to small light canoes for one or two persons. The large canoes are fairly stable; sometimes bundles of bamboos are lashed on each side to the ends of cross-pieces fastened to the gunwales. The small canoes are often very unstable and "cranky." When paddling, the natives sit on short low crosspieces or on the bottom.

The keel of the canoe is made of one or two planks and the sides are built up of rows of rather short planks, all sewn carefully together and strengthened by ribs fastened on the inside. The edges of the planks are beveled, and the new planks are carefully cut to fit the ones already in place. A row of holes is bored near the edge of each plank, and a special tough kind of vine is laced back and forth, thus sewing the edges firmly together. The seam is filled and covered with mashed *Parinari* nuts. This covering soon hardens and becomes firm and waterproof. Many of the canoes have the sides raised by the addition of an extra plank. In the large canoes the prow and stern are quite high and ornamented with shells, while along the sides pearl shell is frequently inlaid.

In other parts of Melanesia all the smaller canoes, and the main or bottom portion of larger ones, are made of hollowed logs or dugouts. In the larger canoes the sides are built up, sometimes as much as three or four feet, and planks are fastened to the edges of the dugout basal portion. These large canoes all have outrigger and sails. The Fijians probably make the finest canoes in the Pacific, and while the smaller ones, up to sixty feet or so in length, are dugouts or built on dugout bottoms, the larger canoes, which sometimes exceed a hundred feet in length, are made of separate pieces and planks firmly fastened together. The keel is laid in two or three pieces, and the sides are built up of planks from three to twenty feet long. The larger Fijian canoes are double, one side being much smaller than the other, and can easily carry a hundred persons with several tons of goods.

Double canoes are also in use in New Caledonia. Here the two canoes are of equal size and support a platform which might be as much as ten feet wide by sixty long. Along the center between the canoes a row of holes is made through which sculling oars could be worked in case the wind failed. These oars are pushed by men standing on the platform. Sculling oars are also used on the large Fijian platform canoes.

Again at Mailu on the south coast of Papua we find double canoes of three kinds—war canoes, large sea-going trading canoes, and smaller ones for use in quieter waters inside the reefs. The ordinary small canoe, however, is a single dugout with outrigger. Double canoes are also used in a number of other places on the south coast of Papua.

The *lakatoi* of Port Moresby is the most remarkable trading vessel of all Melanesia, though by no means the most seaworthy. Instead of taking two dugouts, as in the double canoe, these natives take four or more large dugouts, lash them side by side, and thus form a large raftlike vessel. Large poles are fastened across the tops of the dugouts. A high partition is built around the central portion, which is used for cargo, and a projecting platform is constructed all around the outside for the use of the crew in working the vessel. Two masts made of small trees with spreading roots are lashed firmly to the crosspieces. These vessels can sail only with the wind, and are steered by five or six men with long steering oars. The largest *lakatoi* reported had fourteen dugouts, measured fifty-nine by fifty-one feet, and carried thirty-four tons of sago. These *lakatois* are used solely for the annual trading voyages westward into the Papuan Gulf, a number of *lakatois* sailing together. They start shortly before the southeast trade wind ceases and return some three months later with the northwest winds, thus having favorable winds in each direction.

With the few exceptions already noted the Melanesian canoe is a single dugout, either with or without outrigger, though in the larger ones the sides of the dugout may be

raised by adding one or more planks. On the smaller islands and along the coasts of the larger ones outriggers are used. On interior waters, lakes, rivers, lagoons, and wherever there are narrow channels to be passed through, the outrigger is lacking.

The dugouts without outriggers are of all sizes from a tiny one used by a little boy to large traveling canoes capable of carrying twenty or thirty persons. The large ones are quite stable. The small canoes, on the other hand, are often so unstable that the paddle must be continually used to balance them. One settler told me that when traveling in one of these canoes he often took with him a table and a chair, which were set in the canoe so that he could work during the trip. This was in the quiet lagoon waters of northern New Guinea near Sissano. For nearly two weeks I traveled from place to place around the Purari Delta in southern New Guinea in a similar dugout canoe, with all my baggage, two attendants, and eighteen paddlers. The baggage was easily arranged so that I could sit or recline in the center of the canoe in perfect comfort.

In some places, as on the Sepik and some of the rivers emptying into the Gulf of Papua, the men's canoes are rather low and narrow, and the paddlers always stand. In other places they sit on both edges of the canoe, as the sides are so close together they cannot sit on the bottom. In the larger and wider canoes they may sit along the edges on each side.

The women's canoes are usually wider and more stable than the men's, and the women sit on the bottom.

The outrigger canoe is the salt-water canoe, and seldom gets up even the larger rivers unless the people using it are also coast dwellers. Rarely are both kinds used by the same people. The largest and best of the outrigger canoes are fairly seaworthy, but they are all unsafe in rough water, and the natives will not go out in stormy weather or get very far away from a safe harbor if they think there



Fig. 37. A Tami canoe in Huon Gulf, New Guinea. This type of canoe has two masts, square sails, and a double-decked platform. The sides have been built up by adding two planks. Such canoes are found from the southern part of Huon Gulf to Moewe Harbor in southern New Britain; they are often used for long trading voyages along the coast.

is any danger of a heavy wind. This caution is due to the fact that the irregular twisting and racking of the canoe causes the float of the outrigger to work loose, and the canoe then capsizes. The float, which is always made of a soft, light wood, is not fastened directly to the outrigger poles. A number of long, sharp, wooden pegs are driven into it, and the outrigger poles are lashed to these pegs. In rough water the pegs often work loose and come out. The under side of the float is very carefully shaped and smoothed, so that it will slip easily through the water.

The float varies in length in different places but is never longer than the canoe and usually much shorter. It may be fastened anywhere from two to twelve feet from the side, depending on the custom of the locality and the size of the canoe. In all but the smallest canoes a platform is constructed over the outrigger poles above the canoe

and for a short distance on each side, as the poles extend some distance beyond the canoe opposite the float, or a special set of short poles projects on that side to support the platform. Sometimes, as in the Tami canoes (Fig. 37), there may be two platforms, one about two feet above the other, the lower one being used for freight and the upper one for passengers. The platform covers only the central part of the canoe, leaving the ends open. A double outrigger canoe, having a float on each side, is in use in western New Guinea (Fig. 38).

Only the larger outrigger canoes ever use sails. The bottom of the mast is usually set in a special base or socket so it can be shifted. Sometimes it is forked and rests on a crosspiece of the canoe. The mast is held in place by ropes of twisted fiber or rattan. The top is forked or has a hole or a projection that forms a support for the rope used in raising and lowering the sail. Mast as well as sail can usually be easily taken down, but the large Tami and Huon Gulf canoes have two masts firmly lashed in place (Fig. 37). The large Admiralty Island canoes may also have two masts.

Fig. 38. Canoes at Mokmer on Geelvink Bay in Dutch New Guinea. Here are a single outrigger, a double outrigger and a dugout.



The sail is made of pandanus leaves, strips of bark, pieces of palm leaf sheaths or plaited matting. It is usually rectangular, and occasionally oblong, but it may be triangular, as in Fiji and eastern New Guinea, or crab-claw shaped, as in Santa Cruz and southern New Guinea.

The outrigger is always kept on the windward side. If on the lee side a sudden gust of wind might force the float under, in which case nothing could prevent the canoe from going on over. On the windward side the float might be raised out of the water by a gust of wind, but its weight continues to act against the wind, and the men of the crew speedily add theirs by running out on the outrigger, so that the float soon settles back in place. When there is a stiff breeze one or more men often ride part way out on the outrigger to balance the pressure of the wind against the sail. When it is necessary to tack, the sails are shifted so that the canoe goes the other way, what was the front end now becoming the rear. If the canoe has only one mast, both mast and sail are shifted. A large heavy paddle is used for steering. Some of the better canoes can sail fairly close to the wind, but very few can make progress against a head wind. The natives simply go ashore and wait till the wind changes. Most of their trips are coasting trips, or between near-by islands. They are very careful not to get very far from land unless they think themselves sure of a favorable wind.

A wooden bailer is carried in the larger canoes. In the smaller canoes, especially the simple dugout, the men usually kick the water out at the rear with their feet. In some places the rear is left open, the canoe looking as if the rear end had been sawed squarely off. While the curve of the bottom of the canoe keeps this end above the surface, still the water can splash or run in if it is at all rough, so the opening is filled by a mud partition, or one of the men may sit down in the rear end when in rough water.

Paddles are usually cut out of a single piece of wood, but bamboo handles are occasionally used, especially

where the handles are long, as they must be where the men stand up to paddle. Sometimes the shorter paddles have a short, straight, or curved crosspiece at the top, allowing a better, or at least different, grip from that afforded by the straight handle. Blades vary in shape from very long, slender, and pointed ones to almost circular ones, each region having its own type. The ordinary form is found nearly everywhere, however, extreme or peculiar shapes being rare. Both blade and handle are often finely carved and ornamented.

In shallow water the canoes are generally poled unless the bottom is too soft.

On landing, the canoe is usually drawn up on shore, certainly if it be on an open or exposed beach. In such a case even the large canoes will be pulled up out of the reach of waves or tide, the men of the village running to assist the crew, if necessary. In quiet waters the canoes may be temporarily tied to stakes, or anchored by means of a heavy stone fastened to a rattan rope. The large *lakatois* sometimes have anchor cables several hundred feet long.

When on shore the better canoes are carefully covered with leaves, to protect them from the sun. Often, especially in the Solomon Islands, special canoe houses are built to shelter the canoes, particularly the large war canoes.

A light, soft to moderately hard wood is used for the canoes, and trees of a suitable kind, size, and location are highly valued. For the larger dugouts, the trees must stand fairly close to water. The logs are roughly shaped and hollowed in the forest, and are then dragged over poles laid crosswise to the nearest water, whence they are floated to the village to be finished. When the canoe makers live on small islands, as is frequently the case, the trees or roughly shaped logs must be purchased from the natives of the mainland. After the Port Moresby men arrive in the rivers of the gulf, they purchase the

logs for the *lakatois* from the local natives, who cut and deliver the logs to the buyers. The logs are then hewn into shape, and the parts of the *lakatois* are rearranged so that the new dugouts are all included before starting on the return voyage.

The dugouts are shaped and hollowed out with stone or shell adzes. Fire, in most places at least, is not used. The revolving holder of the stone adze favors the work, as it allows the blade to be set at any angle. Although the natives now have iron tools, many prefer their stone adzes for this work, especially for the finishing touches. Often the men would refuse to sell their stone adzes, saying they were now becoming rare, and that they needed those that were left for the canoe-making.

The surface of the canoe is often slightly charred to protect it from decay.

On the outrigger canoes, especially the large ones, there is much work to be done besides forming the dugout. In addition to hewing and shaping the planks, poles, sticks, masts, etc., and lashing everything in place, the canoes are often elaborately carved and painted. Altogether the best of them represent probably the highest skill attained by the artists and artisans of this region.

While small or medium-sized canoes are still made and used nearly everywhere, the largest sea-going canoes are no longer to be found except in the Admiralty Islands and parts of New Guinea. European whale-boats and cutters have taken their place.

Trading

Trading in the old days was more or less a ceremonial affair—how much seems to have depended largely on time, place, and the character of the goods exchanged. For two women to exchange articles of food, or pottery for garden truck, was a simple affair. The three months' trip of the Port Moresby *lakatois* to the Papuan Gulf, though still chiefly for the purpose of exchanging pottery for food,

i.e., sago, was a much more important performance and had to be carried out with due regard to many time-honored customs and rites, so that the supernatural powers would grant them a profitable journey and a safe return. There was reason in this, for many times they did not return. The amount of food obtained was also very considerable and necessary for the Port Moresby people, whose gardens were none too good. One *lakatoi* could carry 1,000 to 2,000 pots, besides other valuable articles, and bring back from ten to thirty tons of sago.

The ordinary exchange of food or newly manufactured articles was a question of bartering, each party trying to make as good a bargain as possible; yet in most places prices did not vary much. Besides this trading there was also a more or less elaborate system of giving presents and receiving in return presents of equal or even greater value. Many valuable objects, especially ornaments, passed from hand to hand in this manner. A highly developed system of this kind was the *kula* of the islands of eastern New Guinea, in connection with which numberless forms and ceremonies must be observed. It was one of the most important social events of the season. This was in a group of friendly islands, however, and conditions favoring such a high development were not found in many places in Melanesia. Nevertheless, the formal giving or exchange of presents was everywhere of importance.

Money

In all places the relative value of different objects is well known. This is often expressed in terms of some common article which then serves as a sort of standard of value and might be regarded as a simple form of money. Dogs' teeth are used in this way in many places for buying small objects, and shell arm rings for more valuable ones.

Besides these objects used as money, but which also have other uses, we find objects used only in trading or in paying obligations of various kinds. These more nearly

represent true money, though so recognized by common consent rather than the stamp of authority. This native money is usually made of shell, though other objects are also used, such as mats in the northern New Hebrides, feathers in Santa Cruz, strings of teeth of the flying fox or the dolphin in Bougainville, and thin fragile stone ax blades in eastern New Guinea. Here also might be mentioned the highly valued glass beads of unknown origin found throughout northern Dutch New Guinea, though these correspond perhaps more closely to valuable jewels than to money.

Of shell money there are three main varieties: large shell rings something like arm rings, strings of small shell disks or beads, and the *Nassa* shell money of northern New Britain. The peculiar shell money of Rossel Island might be regarded as a special variety, in respect to both form and use.

The large shell money rings are made and used in the same regions and in the same way as the shell arm rings of those regions, when these are used as money. These special rings, however, are of such size or shape that they cannot be used as arm rings. They are evidently a special development from the arm ring.

The shell bead money is apparently developed from the shell bead necklace, but it differs in being made up into strings of a certain kind and length, and in the definite way in which it is used as money. This kind of money is used especially in New Ireland, where many varieties are found, but it is also made and used in many different localities from the Admiralty Islands and southern New Guinea to New Caledonia. White is the most common color, red the most valuable. Usually two or more kinds of different value are in use in the same region. The area over which each kind circulates is limited, but it varies greatly and there are many regions where it is entirely lacking.

The *Nassa* shell money of northern New Britain most nearly represents ordinary money. The tops are knocked

off these small shells, and they are strung on strips of rattan large enough so that they stick tightly to the strip. This can then be broken into pieces of any length and the shells will not fall off, so there is no difficulty in making small change, as the length of the strip determines its value. When made, the strips of rattan are spliced together by laying the ends together and pulling a few shells over the splice, so as to make one continuous strip which may reach 2,000 feet in length. This, coiled up in a roll and wrapped with leaves, represents the capital of the owner. The unit of value is a length equal to the distance between the tips of the fingers of the outstretched arms, approximately six feet or a little less. This unit is called *pokono*, and special names are also given to smaller fractions, as one-half, one-quarter, and one-eighth. For still smaller value the shells are counted. Each *pokono* contains approximately 320 shells.

All values are reckoned in terms of this money. Some are fairly uniform, others vary according to the supply and demand. Chickens are worth one-quarter to one-half of a *pokono*, pigs seven to ten *pokonos*, canoes up to fifty *pokonos*; taro, yams or breadfruit sell at about sixty for one *pokono*. There is a separate word for buying with money different from the word used for trading or exchanging articles.

This money is also loaned, and when returned 10 per cent is added, so there is a recognized rate of interest. The money is good for paying obligations of any sort, and the chief aim of every native of this region is to secure as much of it as he can, thus adding to his power and standing in the community. Even the little children are taught the value of money; they are told that not a shell should be wasted, so that at a very early age each one has his own supply of money. At the present time this money, while still valued, is being largely supplanted by European coin.

Throughout all Melanesia there are trading centers as well as manufacturing centers, the two occupations

usually being carried on by the same people. The traders make the best canoes, and undertake the longest journeys. The coastwise and island trade is largely centered in a few small islands lying off the mainland of the larger islands, often so small that their inhabitants have to take to manufacturing and trading to get sufficient food. Such is Mailu on the south coast of Papua, Tami in Huon Gulf, the Siassi Islands between New Guinea and New Britain, the small islands of Berlin Harbor on the north coast of New Guinea, and many others scattered here and there throughout all the various groups of this large area.

Native Life and Property

Daily Life

As is true in so many other respects, the daily life of the people varies greatly with time and place. The food quest is of first importance and often consumes a considerable portion of their time, depending on their manner of life and location. Most of the tribes depend on the soil for their chief food supply, and at certain seasons of the year the natives are all very busily at work in their gardens.

While sailing along the north coast of New Guinea, we arrived late one night in the harbor of a large and important village that I wished to visit. I carried a big assortment of trade goods, some of which the natives were very anxious to acquire, as they were far distant from any trading station. It was too late for any business when we cast anchor, but early in the morning before the sun was even up, a deputation came aboard and reported that they wanted to trade but that they simply had to get to work in their gardens and I must come ashore with my goods immediately if I wished to do any business. So ashore we went, and trade was brisk for a short time, but the crowd gradually thinned out and within less than an hour the village was practically deserted, nobody remaining but the aged and a few small children. Not even a foreigner with all his goods could keep them from their work.

The native Melanesian is usually an early riser. For sanitary purposes the men retire to a definite area at a little distance from the village, the women to an

equally definite but different place. A morning bath is usual in some places, in others this is postponed until the day's work is over. Breakfast is usually a cold lunch made up of what was left over from dinner the evening before, though in some places when there is no special work on hand a meal may be prepared for the mid-forenoon. When work is pressing in the gardens, however, the natives are usually on their way thither before the sun has appeared above the horizon.

While the women go nearly every day to the gardens for fresh vegetables, and perhaps to do a certain amount of weeding and cleaning, the clearing and planting season, which demands the work of the men, usually lasts but a relatively short time. At other seasons life is more leisurely, and they sit around and gossip, smoking or chewing betel nut for a while before taking up the day's work. The men may do little else all day, but nearly always there is something on hand—a piece of wood-carving or an ornament of some kind—on which each man works in a more or less desultory fashion. The men gather at their clubhouses, or sit around on various sheltered platforms, on the front veranda, or the lower open story of their houses. It seldom happens, however, that they do not have some definite work to do, such as house or canoe making or repairing, making rope, putting fishing and hunting gear in order, or perhaps making some articles for household or personal use, to say nothing of the care of their weapons, a task not at present so necessary as in former years.

If there is no morning meal to prepare, the women tidy up around the house, often sweeping the ground clear of refuse with bundles of stiff fibers, such as the midribs of palm leaves. Babies are washed and cared for; older children look after themselves. Water and firewood may need to be brought from some distance. They soon settle down, however, to the work in hand, such as the making of pottery, string bags, baskets, mats, nets, or

articles of clothing, often gathering in small groups in the shade of the houses or the neighboring trees.

Most of the work is done before noon, even the work in the gardens, if these are near and the work is not too pressing. During the hottest part of the day they all take a siesta. Later in the afternoon the women have dinner to prepare, and the men resume their various occupations. The evening will often be occupied in sitting or lying around the fire telling stories. They lie down and go to sleep when they feel like it. The fire is kept going during the night, some one getting up now and then to look after it. Often two or more will wake up and carry on a conversation for a time. In the men's houses, especially when there are visitors, talking may go on in this way during the whole night, as I have sometimes experienced to my sorrow while trying to get a night's rest.

Such a quiet day in the village as outlined above is the exception and not the rule. If there is no need of going to the gardens, there are fishing expeditions, canoe trips, or hunting parties to take up the time. These also are dependent largely on the seasons, for certain times are much better than others. Then there are the numerous festivals, dances, and ceremonies to demand attention, with a more or less lengthy period of preparation; also social events—visitors to be entertained and calls made in return. In the old days more or less fighting was going on, and there was continuous war in many places.

So life in a Melanesian village is more than lying under a coconut tree waiting for the nuts to drop. At the present time some natives may be able to live in this manner, by selling the nuts to the traders and buying what they need with the proceeds; but formerly the necessities and luxuries of life—food, shelter, clothing, ornaments—were all acquired by hard labor. Yet the labor was not so continuous as to become drudgery, and there was usually much leisure between periods of toil. Here again we must remember that conditions varied tremendously, with time as well as place, for famines were not unknown, and a con-

siderable part of the population of certain regions has been known to perish of hunger. The native lives from day to day, and, if through lack of rain his gardens fail him, he has little to fall back on.

Division of Labor between Sexes

Both men and women share in the responsibilities necessary to make a comfortable living. Each one has tasks to perform, and if he, or she either, is remiss in seeing to any of them, he will soon hear of it. Long-established social custom has determined each one's duties, and most of them take pride in the proper performance of these duties. A missionary told me that one time, meeting a man and his wife returning from their gardens—she, as usual, loaded with the garden truck—he had asked the man why he did not help his wife carry the things. The woman immediately told him in emphatic terms that she was perfectly able to do her own work, and she did not wish to have either herself or her husband insulted by any such suggestions.

The division of labor is much the same throughout all the islands, though there are many minor variations; for example, in some places the men mash out the sago preparatory to washing, while in other regions this is women's work. In general it can be said that the men do the hard and heavy work, while the women take care of the lighter tasks. It is the women's duty to gather the firewood but if a heavy log is to be brought in the men carry it. Large yams, heavy bundles of sago or other weighty objects will be carried by the men, who usually fasten the load to poles borne on the shoulders. The heavy work of clearing the forest, breaking up the soil, and fencing the gardens, part at least of the planting, and even the care of certain crops in some places, belong to the men. The women weed and care for the growing plants and often attend to the final preparation of the soil and do the planting. Very often the man and his wife will go

out to their garden plot together, each finding plenty of work to do in its care. If the gardens, as is often the case, are at some distance, a group usually goes together, the men armed to be able to resist any sudden attack or ambush on the part of their enemies. In the old days there was constant danger of this, and hence the men had to be free from burdens in order to resist on the instant any surprise attack. The men also are constantly on the lookout for game of any kind, as such additions to the larder are much to be desired.

Hunting is men's work, but fishing is done by both men and women, who often work together in large fish drives. The men use the spear, bow and arrow, usually the hook and line, and the large seines, while the women use the smaller nets and dip nets. Traps are made and cared for by both, though the larger traps and heavier work are usually taken care of by the men.

In house-building the men do most of the work, though the women usually help with the thatch. All wood work is done by the men, including the making of all household utensils of wood and usually those of coconut shell, while other household objects, such as mats and baskets, are usually made by the women, and earthenware always is.

Bark cloth, when manufactured to any extent, is made by the women, though the men often make their own clothing. All women's garments are made by themselves, as well as most of their ornaments and small personal possessions, such as shell knives and bone awls. The same is true of the men, who look after their own ornaments and personal possessions, often even making the string bag or basket in which these objects are kept. Where ornaments are made for barter rather than for the individual's own use, the industry is sometimes carried on by the men, and sometimes by the women. Large shell rings and breast ornaments are usually made by the men, but in northern New Guinea the women do most of this work, even grinding and boring the heavy

arm rings. The women usually make the smaller objects, especially the shell disks often used for money.

Trading is carried on by both men and women. The important trading voyages and expeditions are managed by the men, but much local trading, especially where food is concerned, is done by the women, often in regularly established market places on definite market days.

Women's Rights

The woman's right of ownership to all articles of personal clothing and usually to ornaments and articles manufactured by herself, is generally recognized. When I wished to buy such objects, I had to buy them from the women, either directly, or indirectly, if they were too shy to deal with me in person. The men, apparently, had little to say about most such transactions. Objects of general household use were sometimes purchased from the man, sometimes from the woman, but her consent was necessary, in many cases at least. The women possess, however, few personal ornaments, and few are worn by a married woman except on special occasions when she may wear the "family jewels," whose ownership is vested in the head of the family, or any other ornaments lent her by the men. The ornaments worn by girls and young women before marriage are also largely family property. These ornaments are often heirlooms, and the natives prize them most highly.

Property Rights

The ownership and inheritance of property is a knotty problem, and is bound up with the social organization. There is personal property, family property (single family or group recognizing a common head), clan property, and tribal property; also that of special organizations and secret societies. Not all of these, of course, are found in every village or tribe; but individual, family, and tribal property are everywhere recognized.

Individual property we have already mentioned. Family property might include heirlooms of various kinds, especially ornaments, houses and the most important household utensils, large pig nets, fish nets, canoes, and gardens. These may be under the control of one man, and so can be regarded as being in a sense his own private property; still the other members of the family have certain rights. Important objects, such as large pig nets, seines, and canoes, are generally owned by a clan or group of men. The purchase of such objects is often extremely difficult, as every separate owner must be satisfied.

Tribal property is usually limited to the land, though, if the tribe be small, large communal buildings and other important objects may also be included. Tribal boundaries are nearly always well known and clearly defined. If the tribe is large, the different sections and villages will also have their definite areas.

Land Ownership

All the land falls into one of three general groups: the village lots, the gardens, and the unused land or bush. The right of individual ownership to the first two is generally recognized, but the bush belongs to the community. Even in the others the right of individual ownership seems to have been based originally on use, and this is still true in many places, especially in regard to gardens, which may be regarded as private only as long as they are used. In other regions almost all the land has come to be privately owned, and is inherited by a man's heirs. Usually, however, it is not allowed to pass out of the family or clan group.

In a few places women may inherit and own land, but usually ownership is limited to the men. In most places, however, a woman may be given the privilege of cultivating a piece of land, in which case the product of her labor belongs to her. This idea is also extended to include

fruit trees and coconuts. These do not go with the land, but are owned by the person who planted or inherited them, who alone has the right to whatever they produce. Usually he may not cut down or remove the tree without the land-owner's permission, though in some places in Fiji he may cut the tree down if he does not allow the ax to touch or disturb the soil.

Community Ownership

We have already seen that the ownership of many objects is vested in the family or clan, although they are subject to the control, if not in the actual possession, of the chief man or men of the group concerned. These influential men also have the right to request gifts from other members, which request can not be refused. Certain relatives, particularly the mother's oldest brother, have almost unlimited power in this respect. In fact, in some places it is not good form to refuse a request from almost anybody. It is understood that a return gift of equal or even greater value will be given at some future time. The result is that any young man returning to his village with a boxful of goods is speedily relieved of everything except a few undesirable trifles. To be sure he acquires honor and credit for his enforced generosity, and many good things are due him in the future, and if he were in need all would come to his assistance; but he is effectually prevented from accumulating a horde of personal possessions. The same rule holds in the case of eatables of all kinds. In the case of vegetables this is not so noticeable, as each family usually has enough and to spare, but any one who killed a wild pig or wallaby and kept it for his own use would be regarded as insufferably selfish—in fact, such things simply aren't done. The products of successful fishing or hunting expeditions are always shared with other members of the community. Hence no one suffers for the lack of life's necessities unless all suffer.

One might think that this would encourage laziness, and that some people would refuse to do their share; but

honor and social position go with giving and service to the community, and, while there are degrees of service, few are so low as to be willing to be social outcasts, which would be their fate if they gave nothing. Such might live on the community for a time, but if they became too much of a public nuisance they would be gotten rid of in some way.

Thus, while there is a definite recognition of private property, in actual practice there is a considerable amount of communism, which discourages extra labor for selfish purposes. In places there are men who through greater intelligence have acquired both power and wealth, often by actual service to their community in assisting and leading it in successful warfare against its enemies. These men may become chiefs, with great power and influence, not only over their own, but even over surrounding tribes.

Bequests at Death

A man's property is at his death more or less equally divided among his sons, or, if he has none, his brothers or next of kin. When descent is in the female line, the nephews might be expected to inherit the property, and often do, but in many places the sons' right to some of the property at least, is recognized. A man's purely personal possessions are often destroyed at his death or buried with him. His pigs and food reserve are eaten at the funeral feast, so if he is not rich there may be little personal property left.

In a few places the women inherit a portion of the garden plots, but generally they get little outside of a few objects which were their mother's personal property, and these are usually claimed by the sons or nephews for their own wives.

Position of Widows

Minors are taken care of by their older brothers or uncles. If the widow has young children, she usually

lives with her husband's family or is taken care of by them. As the women do most of the work of gardening and food-getting, this is no particular burden. If there are no children, she may return to her own people, or she may stay with her mother-in-law and assist in the family work. In fact, her help may be so valued that they may try to prevent her leaving or marrying again.

Toys and Games

In discussing this topic we have to deal chiefly with the children. Toys are not used by adults, and while the men occasionally, at least in some places, indulge in competitive games, these are not very common. Such are liable to end in a real fight, as the men are too proud to admit defeat.

In the regions subject to European control, however, and especially those under English influence, sports and games such as cricket and canoe racing have become common. Some of the earlier attempts to introduce sports led to disastrous results. At Kerepunu in southern New Guinea a canoe race was organized between a number of villages. All went well as long as the Kerepunu canoe was leading, but when another canoe forged ahead, a man in the Kerepunu canoe arose and calmly put a spear into one of the paddlers of the leading canoe, so the Kerepunu canoe again took the lead and won the race. The spearman explained by asking, "What right have people from another village to come and win a race in our waters?"

In the old days war was the great game. Hunting and fishing yield a certain amount of sport, while the chief recreation is obtained in the dances, feasts, and ceremonies of various kinds. Nevertheless the young men, and sometimes even the older ones, often indulge in contests showing skill in the use of weapons, such as shooting with the bow and arrow, throwing the spear or a special kind of dart, or even making and flying kites, as frequently occurs among certain tribes of the Papuan Gulf. The tug-of-war is fairly common. Different kinds

of ball games appear in some places. One rainy day in the Solomons I took shelter in a clubhouse, and found the young men playing a game with round nuts which were rolled over a regular course on the earthen floor so as to strike other nuts. The game suggested ninepins, though the rules were very different.

Children's Play

In speaking of children's games it must be remembered that conditions vary in the different parts of Melanesia. There is little room in the crowded family hut for games, and out-of-doors there is a great difference between the sandy beach and coral reefs of some protected harbor, the muddy swamps of the river delta, and the steep slopes and forests of the interior. In general there is little or no oversight of the children, and they are allowed to do exactly as they please so long as they do not interfere with their parents' work or pleasure. Toys are few, in some places almost entirely lacking.

While the men often make such things as small canoes, kites, or bows and arrows for the boys, usually the children have to make their own toys or playthings. Their chief play is imitating the daily occupation of their elders—the only life they know. The girls play at housekeeping, preparing food, making mats, baskets, pots, or whatever other work their mothers do. As a doll to represent the baby a plain stone is used at Mailu in New Guinea, a carved and painted one in the New Hebrides. Carved wooden dolls are used in the Solomons, and in New Caledonia we find wooden carvings representing the baby lying on its tray-like cradle. At an early age the girls go to the gardens with their mothers and help wherever they can. Fishing, of course, is always a joyous occasion.

The boys take to warlike games, such as cultivating skill in the use of the bow and arrow, spear, dart, sling, or whatever other weapons are known to them. As food is not overabundant, a favorite pastime is trapping or

hunting for whatever edible objects they can find, whether in the forest or along the seashore, and almost anything that will help to support life is acceptable unless it be taboo for some reason.

Under favorable conditions life is not strenuous, however, and for the young folks it is one continuous holiday. A number of writers have spoken of the happy groups of children playing in the water or on the sandy beach, or hunting over the coral reefs for whatever they can find. This latter occupies the girls especially, and continues to do so even when they grow older, as it is one source of the family food supply. For the children, the seashore village provides an almost ideal home.

Under such conditions we find many different kinds of games. One writer enumerates 113 different games that he found in a number of villages along the north coast of New Guinea. The lowest number in any one village was thirty-one, the highest sixty-five. Doubtless many were overlooked. A number of these closely resemble European games, but most are different. Many games have been recorded from other regions, some the same as these or similar to them, others quite different.

A large number of these games are imitative and have more of the nature of plays than games proper. Aside from imitating the parents' occupations, there are plays imitating the activities of all sorts of animals, even fish and insects. For example, there is the hornets' nest game. A number of girls sit down as close together as they can, cover themselves with leaves, and set up a sort of humming sound. Some other girls hear the noise, get some lighted torches, and beat them on the top of the nests, when out fly the angry hornets in all directions to defend their nest.

There are many games in which the children arrange themselves in some order with one left over who becomes "it," as we say, and then has to do some particular "stunt," such as breaking out of a circle or walking over

a row from one end to the other. Other games are almost identical with our leap-frog, crack-the-whip, hide-and-seek, and hide-the-thimble. There are many hiding and guessing games.

Ball Games

Ball games are of two main kinds. A sort of handball is found in many places. The ball is made of a bundle of leaves, a nut covered with leaves, or a pig's bladder filled with air. It is not caught, but is struck with the open hand, the object being to keep it in the air as long as possible. There may be two or more players striking it back and forth, or one player may see how long he can keep it up in the air by himself. In the other kind of game there are two sides and the ball is a hard, round nut which must be driven beyond the opponents' goal. In some places a straight stick is used to drive the ball, in others one curved at the bottom. The ball must not be touched with hand or foot. In one place at least the players use handfuls of sand which they throw against the ball, and so drive it the way they wish it to go.

Football does not seem to be common but is reported from Aoba in the New Hebrides. A native orange, bread-fruit, or coconut is used for the ball. This is kicked back and forth between two parallel fences, and goal is gained when the ball is driven out at either end.

Tops

In most places the children have tops of some kind. One common sort is made by pushing a sharp slender stick through a round seed. The upper end projects far enough so that it can be rolled between the palms of the hands, or it may be twirled with thumb and finger. Sometimes the larger part is below, and it may be spun by means of a string. In place of the seed a circular piece of wood or coconut shell may be used.

Rounded seeds and hard fruits or the pointed ends of coconut shells are spun with a string, like peg tops. Even rounded stones may be used in a similar way. Dr. Guppy reports the following game from Treasury Island in the Solomons: "An oval pebble about two inches long is placed on a leaf on the ground. Each boy then takes a similar pebble around which a piece of twine is wound; and standing about eight feet away, he endeavors in the following manner to throw it so as to fall on the pebble on the ground. The end of the twine is held between his fingers; and as the twine uncoils, he jerks it backwards and brings his pebble with considerable force on top of the other." Whip tops are also found in some places.

Swinging

Where the forests furnish long, slender rattans and climbing vines, the children take pleasure in swinging on these, or they make swings of different kinds. Occasionally these swings are made with two supports something like our own but usually only a single support or rope is used. At the lower end a loop may be made for the foot, or a crosspiece fastened at a suitable height, to which the swinger holds with his hands. Swings may be used in competitive games, as in seeing how far away one can land after swinging out as far as possible before letting go of the swing, or in swinging so as to drop on the opposite side of a stream. Small swings are sometimes put up in the houses for the younger children, and even the older people enjoy swinging.

Wherever there is water the children spend much time in swimming and water games, and soon learn to swim like fish. As they have no clothes to bother about, going in or out of the water is a simple matter. Where there are exposed sandy beaches, riding the huge rollers as they come in is great sport, and special surfboards are made and used in some places, as northern New Guinea and the New Hebrides.

Children's Games

The boys and girls usually play separately. In many games, however, the children all play together, while in some the boys and girls oppose each other. In one common game in southern New Guinea the girls bury a number of objects, such as coconuts, in the sand, and then sit down on top of them, forming as compact and impenetrable a group as possible. The boys then try to drag the girls away and get the coconuts. The girls are sometimes allowed to use small sticks with which they belabor the boys, who often get considerably bruised before they succeed.

The great time for games is in the evening or on moonlit nights. Many of the games are accompanied by songs, and the natives also sing when they are hunting and fishing. Some of the songs are to be regarded as charms. The children have many different songs and charms distinct from those of their elders. In many cases the words do not seem to have any meaning, or at least no one knows their meaning at the present time.

As with us, many games, such as kite-flying, ball-playing, and canoe-sailing, are played only at certain seasons of the year. String figures are often the rage during the rainy season, as the children can practice these in the house or on the veranda. Of these there is a great variety, some very complex, demanding the use of fingers, toes, mouth, and even a second person to help.

There are also many other ways in which the children amuse themselves. Shadow pictures are made with the hands. Pictures of various objects are drawn with charcoal on the sides of canoes, or with a stick on a smooth place on the sandy beach. Figures of men or animals are made of wet sand or of mud or clay along the river banks. On the banks of the Sepik River miniature villages have been observed. Toy windmills are made out of coconut leaves pinned on the end of a stick with a sharp, slender thorn.

Melanesian children, like others, enjoy making peculiar noises in different ways. There are whistles and pipes of different kinds, squawkers made of leaves or hollow stems, buzzers made of a nut or a circular piece of shell on a string, toy bull-roarers, humming tops, small drums, or almost anything to beat time on when imitating their elders' dancing.

It must not be imagined that all children in all places have all these toys and games. In the swamps and mountains the games and playthings are apparently few. Life is often hard, even for the children. Other regions are more fortunate. One writer of long experience says: "The children of Arosi (Solomon Islands) have toys, wooden dolls, dogs and pigs, swings, bows and arrows, model canoes, musical toys such as the whistling bamboo, a jew's harp and pan-pipes; they . . . have plenty of time for play and few punishments; endless games and songs and dancing through the long moonlight nights; many quaint customs, great freedom; and, though there are some things to set on the other side, yet I think on the whole the joys of childhood in Arosi must be greater than any we Europeans have known."

Music and Musical Instruments

Singing

“The most pleasing characteristic of the Papuans is their love of music. When a number of them are gathered together and when they have eaten well, or are for any other reason happy, they have a concert. Sometimes the concerts take place in the afternoon and continue till nightfall, but more often they begin after dark and go on almost through the night. The orchestra is simple and consists of two or three men who beat drums and sit before a small fire in the middle. Round them are grouped the chorus all sitting on the ground. . . . The scheme of all these songs is the same, viz., a recitative with drums and a humming accompaniment, but some of them have really rollicking choruses. . . . The voices of the men are often rich, and they have a true musical ear. Their intervals are very similar to ours.” Thus writes an experienced traveler in Dutch New Guinea.

Concerning the native songs of another region Dr. Guppy writes as follows: “The Solomon Island songs, although often monotonous to the cultivated ear, appeared to me to be in consonance with the wild character of these islanders. Often when I have stopped to rest in the midst of my excursions—it may have been by a stream in the wood or on the edge of a tall cliff overlooking the sea—my native companions have sat down and commenced their monotonous chanting, which, discordant as it may have sometimes seemed to me, appeared to be in unison with my surroundings. Now raised to a high key, now sinking to a low subdued drone, now hurried, now slow

and measured, these rude notes recalled to my mind rather the sounds of the inanimate world around me."

The recitatives with humming accompaniment and chorus are often improvised accounts of recent events, and a skilled singer of this kind is held in high honor. Well-known songs are often sung in unison, with drum accompaniment. Many are sung in connection with the dances. Sometimes the songs are so old that the meaning of the words is unknown. New songs are also introduced from other regions, and travelers frequently bring back foreign songs, which they teach to their fellow villagers.

Drums

Drums are used to accompany singing and dancing. There are two main types of drums: one with skin head, usually beaten with the hand, the other a sort of wooden gong pounded with a stick. The first type is found throughout most of New Guinea, New Britain, and southern New Ireland. It varies from cylindrical to more or less hourglass shape and usually has a handle on one side near the center so that it can be carried in one hand

Fig. 39. Dancing at Cape Merkus, on the south coast of New Britain. Each man carries a hand drum which he beats as he sings and dances.





Fig. 40. Beating large drums for a dance in the enclosure surrounding the sacred house at Kaian, on the north coast of New Guinea. The drums are made from a section of a log that has been hollowed out and closed at the ends.

while being beaten with the other. It is made from a section of a limb or a trunk of a tree, the interior being hollowed out so as to leave the wall rather thin. Coals of fire are often used to burn out the interior, with the assistance of a bamboo blow-pipe. Occasionally a section of bamboo is used instead of the wooden drum. One end is covered with the dried skin of a snake or lizard, the other left open. The usual size is from a foot and a half to two feet in length, with the head from four to six inches across. Very small drums are sometimes found, however; in southern New Guinea in the Fly River valley and westward they sometimes exceed six feet in length. Some are without handles and too heavy to be carried by the dancers, but around Merauke the men often carry drums nearly as long as themselves. They are of light wood about the thickness of cardboard.

In many dances every man carries one of these hand drums (Fig. 39), which is beaten with the open fingers of the right hand, giving the rhythm of the dance and

accompanying song. The drummers may also form a sort of orchestra, while others dance. The pitch of the drums can be regulated to some extent by sticking wads of gum on the drum-head. These hand drums are usually more or less ornamented, often with intricate incised designs or carved figures of various kinds.

The second type of drum is made out of a section of a log hollowed out through a slit on one side, but with the ends closed. These drums vary from one to several feet in length, and from a few inches to two or three feet in diameter. The smaller ones are seldom used except with the larger ones, forming a sort of orchestra, in which there may be six or eight pieces, all of different sizes. The drum is beaten by thumping or pounding on one side of the slit near the center, a loud reverberating note being thus produced.

This type of drum is widespread. It is found in northern New Guinea (Figs. 40; 41, *b*), chiefly in the territory between Potsdam Harbor and Dallmann Harbor; the Bismarck Archipelago, especially the Admiralty Islands (Fig. 41, *a*); the Solomon Islands, more particularly the region around the Bougainville Straits; the New Hebrides; and Fiji. Usually these drums lie horizontally on the ground or on blocks put under each end, but in the central New Hebrides they are set in the ground, three or four feet of log being left at one end for that purpose, so that the lower end of the slit is a foot or more above the ground. The top also is usually extended beyond the hollowed portion and often carved to represent a human head or face. Drums of different sizes are usually set in groups, in or at the edge of the dancing grounds (Fig. 42). The drums have different pitches and are tuned in some way to suit the natives' ears. In Malekula the natives refused to sell me a drum out of one of these sets, on the plea that it would ruin the whole set. In Malaita in the Solomon Islands three horizontal drums of different sizes made up the set.

In New Guinea and the Bismarck Archipelago the drum-stick is four or five feet long, and is thumped end-wise against one side of the slit (Fig. 40). In Bougainville a bundle of rattans is used in the same way. In the New Hebrides a short, thick stick, held by one or both hands,



Fig. 41a. A large drum from the Admiralty Islands. The handles are carved to represent crocodile heads.

is pounded against the drum. In Fiji one or two short clubs are used as drum-sticks.

These drums are also used for signaling and for sending messages. Certain combinations of beats are given particular meanings, so that information of various kinds can be transmitted in this manner. One day on arriving at a village where a young man lived who had acted as my interpreter, I found everybody away at the gardens except a couple of old men. One of these happened to know who I was, motioned to me to sit down, went over to one of these drums, thumped on it vigorously for nearly half a minute, then came back and sat down. Twenty minutes later the young man came in from the garden alone, and when I asked him why he had come back, he said the old man had told him I was there and wanted to see him. On San Cristoval in the eastern Solomons, according to Fox, "by an ingenious system of special beats for a large number of words, and a liberal use of metaphor ('tree of the sea' representing a ship) almost any message can be sent to a village as much as eight miles distant."

In some places a much simpler and smaller drum of this type may be made of a section of bamboo. In New

Guinea a piece of bamboo from four to six inches in diameter and two or three feet long is cut so as to leave a vibrating tongue at one end. The Port Moresby *lakatois* usually carry some of these drums. In other places they are used by the women, who are not allowed

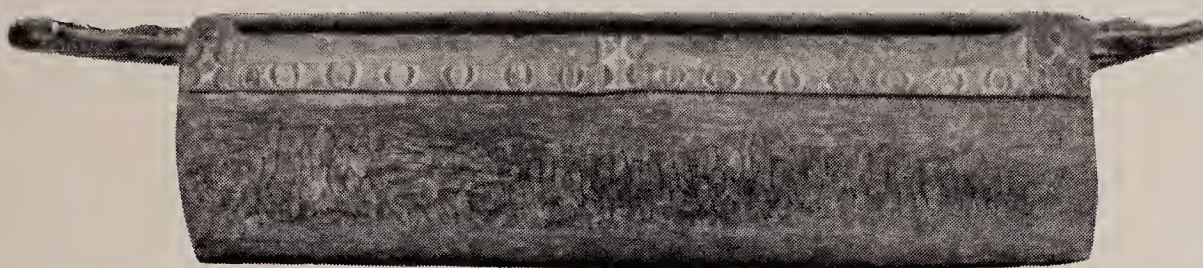


Fig. 41b. A large drum from Awar, on Hansa Bay.

to play on the large wooden drums, to accompany their songs.

The beat or rhythm of the dance or song is sometimes emphasized by pounding together two sticks or clappers made of bark, by thumping pieces of bamboo on the ground, by stamping on boards laid over a hollow in the ground, or by vibrating rattles of various kinds held in the hand or worn on the arms, legs, or ankles of the dancers and singers.

Wind Instruments

In parts of Bougainville the orchestral instruments consist of sets of pipes of different sizes. There is a bass pipe made of a section of palm some five inches across and four feet long, with half a coconut shell set in the upper end. On the top of the shell there is a hole about an inch across. The other instruments consist of sets of bamboo pipes in twos and fours, some large, some small, the pipes of each set being about the same size, but of different lengths. These are arranged in a row like pan-pipes, with another row of supporting bamboos at the back. The latter are for support only. The larger pipes, an inch and a half or more in diameter, have the upper



Fig. 42. Beating drums at Uripiv, in the New Hebrides. The drumstick used by the man at the right is thick in the middle and pointed at each end. The drum he is beating has been carved at the top to represent a human head.

opening reduced to an inch or less by a set of short pieces of bamboo set one inside of the other and cemented in the top of the larger bamboo pipe. These orchestras are made up of half a dozen or more players. In some places in this region small panpipes are carried by the dancers themselves.

The instruments so far mentioned are used in connection with singing and dancing. There are also other instruments that are played purely for the player's own pleasure, or to please or charm some one else.

Panpipes made of a number of small bamboo tubes, from two to four or more inches in length, are found in many places throughout most of the Melanesian islands. They are rare in New Guinea and apparently lacking in

the Admiralty Islands, some of the Solomon Islands, and Santa Cruz. The pipes are usually arranged in a single row, but may be grouped in a more or less circular bundle, as in western New Britain and southwestern Malekula. Panpipes seem to have been most common in New Ireland and the neighboring parts of New Britain and the Solomons. The number of pipes usually ranged from five to ten, but occasionally reached twenty, varying from two inches to over a foot in length.

Bamboo flutes (Figs. 43 and 44, *a*) are also found throughout the region, including many places in New Guinea. The most common form is open at the top, often notched on one side, closed at the bottom, and has two, occasionally three or four, holes. The size varies considerably. Some of the New Hebrides flutes are large, a dozen Ambrym flutes ranging from two to three and one-half feet in length, and from one to one and three-quarters inches in diameter. Ambrym also has a double flute, made of a piece of bamboo that has two joints and a partition in the center and at each end, so that both ends are closed. Four holes are made, one on each side of the central partition and one near each end. By blowing in one or the other of the central holes two different notes can be produced. The New Caledonia flute is long, slender, and usually curved. It is blown from a hole near the upper end (Fig. 43, *a*). It has two holes near the other end. Nose flutes are used in a few places (Fig. 44, *a*).

Another widespread musical instrument played by the young people for their own pleasure has a vibrating tongue something like a jew's-harp, and is usually called by that name. This is common in New Guinea and many other regions. It is usually made of bamboo, sometimes of palm wood. It is held in front of the mouth or between the lips, and the tongue is made to vibrate by jerking or twanging a string attached to the basal end (Fig. 44, *c*).

The small bows used by the boys in their games are sometimes used in the same way. They are held between the teeth or lips by the back, usually near one end, while



Fig. 43a. A flute-player at Oubatche, in New Caledonia. This slender, slightly curved flute is blown from a hole near the upper end.

Fig. 43b. A boy playing the flute. In this type of flute the fingers are used as stoppers. St. Matthias Islands.



the string is picked with the fingers, or struck with a small stick. This is the simplest form of the musical bow.

In Ambrym in the New Hebrides a special musical bow is made (Fig. 44, *b*). It is from fifteen to twenty inches long, an inch or so broad at one end and narrowing toward the other, which is supplied with a short tip having a shoulder on each side to catch the string. Near the broad end is a small hole through which the string is passed and caught by a knot on the end. The other end of the string is wrapped around the tip at the smaller end of the bow. The string is made of a rootlet of the coconut palm, and a short piece of the midrib of a leaf is used to pick it. The bow itself is rather thin and well finished.

Stringed Instruments

In the central Solomons a rather crude musical bow is made of a slightly bent stick somewhat over a foot in length with a tip cut at each end. A string is tied to one end, then passed around the other end and back again, thus giving two strings. These may be tightened by low bridges slipped under them, and while being played one or both may be held down by the fingers.

A better-made but somewhat similar musical bow was formerly used by the women in northern New Britain. This bow had considerable curvature, and over one of the strings and the back of the bow a loop was passed, drawing this string down toward the bow and thus tightening the other string. By shifting this loop the tension on the other string could be varied. It is interesting to note that this instrument is reported to have disappeared completely within two or three years after European jew's-harps were introduced.

In the same region the men had a simple form of xylophone which they played to charm the beloved. This consisted of two pieces of wood about three feet long, four inches wide, and one to one and one-half inches thick,



Fig. 44a. A Fijian playing a nose flute. The opening of this flute is held close to one nostril, while the other is closed with the thumb; the stops are manipulated with the fingers.



Fig. 44b. A type of musical bow seen in the New Hebrides.



Fig. 44c. A boy playing a bamboo jew's-harp. Wakde, on the north coast of Dutch New Guinea.

rounded on the edges. Each one had a shallow depression burned in on the under side. It was laid across the player's legs, or on two banana stalks, with a space underneath, and was played with two short sticks. While using this instrument, the player kept himself concealed in the bush or some out-of-the-way place, as no woman was supposed to witness the performance. The results were not at all displeasing, and skillful performers could keep on for hours with almost unending variations. The sound carried for a considerable distance, and on quiet moonlight nights a regular concert might be heard around the native villages.

The shell trumpet, usually made from a *Triton* shell, is used almost entirely for signaling. One is commonly carried on a large traveling canoe to announce its arrival. On land such trumpets are often used for transmitting messages, especially in regions where the large wooden drums do not occur. At Hansa Bay I found it used to represent the voices of the visiting spirits or local deities.

On the lower Sepik River wooden trumpets from one to four feet long are in use. The mouth opening is on the side near the smaller end. Bamboo trumpets are reported from a few places.

While not made by true musical instruments, there are ways of producing peculiar sounds that are supposed to represent the voice, or indicate the presence, of visiting spirits or deities attending certain important ceremonies. This use of the shell trumpet has been noted above. The bull-roarer, another instrument of this sort, consists of a thin flat piece of wood usually between six and twelve inches long, from one to three inches wide, and about one-eighth of an inch thick. It is widest near the center, tapering in a gentle curve toward the ends, one being somewhat pointed, the other more blunt, with a hole near the end. When the instrument is used, one end of a string several feet long is fastened through the hole, and the other end is tied to the end of a pole somewhat longer than the string. By means of the pole the bull-roarer is swung

around rapidly in a circle, making a peculiar humming sound that rises and falls with the rapidity of its movement. It is found chiefly in southern New Guinea from the Papuan Gulf westward, around Huon Gulf, in parts of New Britain, New Ireland, the central Solomons, and the central New Hebrides. Without its sacred character and mysterious meaning it also occurs in many other localities, usually as a plaything.

Pipes of different kinds are used in many places in northern New Guinea to produce the mysterious noises. At Hansa Bay there were two bamboo pipes about five feet long known as male and female, the tone of one being pitched considerably lower than that of the other. They were blown through a hole near one end, and produced a shrill, penetrating note.

Friction Instruments

In northern New Ireland the spirit's voice is produced by rubbing the hands, first covered with a little rosin, on a peculiar wooden instrument with three vibrating tongues of slightly different size. The resultant sound or sounds are said by Parkinson to resemble the bray of a jackass.

In the Banks Islands the butt-end of a palm-leaf stem was rubbed back and forth on a flat stone, thus producing, according to Codrington, "an extraordinary sound, which can be modulated in strength and tone at the will of the performer, and which may well have carried with it the assurance of supernatural presence and power."

In some places, instead of using a separate instrument to produce the sound, one is used which merely modifies the human voice so as to render it wierd and unrecognizable. Once on entering a village near the mouth of the Sepik I heard most peculiar and uncanny sounds proceeding from under two of the men's houses. Some kind of ceremony was in progress, and each house was entirely enclosed so that no one could see into or under it. The sounds came first from one house, then from the other,

with rising and falling intonations, suggesting a conversation, yet so unhuman that I could not imagine what produced them. Finally I was allowed to go under one of the houses, and found that the sounds were produced by talking, or pretending to talk, into a bamboo tube about two feet long, the walls of which had been cracked all around into a great number of narrow strips that vibrated with the breath, the combination producing a most unearthly effect. In Ambrym in the New Hebrides a short bamboo tube, with one end stuck in water in a coconut shell, is used to produce a similar effect.

All these instruments are in most places regarded as more or less sacred, and no woman, child, or uninitiated person is allowed to see them. Some, such as certain of the bull-roarers, are especially sacred. These are often finely ornamented and represent particular spirits. Others, such as the split bamboos, are merely a means of mystifying the outsiders, and the men carry on their pretended conversations with the greatest glee.

Art

In art as well as in other respects we find great variation in the different regions of Melanesia, not only in the character of the art and the way in which the artistic impulses find expression, but also in the extent to which these impulses, if present at all, have been developed and practiced. In other words, in many places, such as among the poorer mountain or swamp tribes, we find nothing except possibly the crudest forms of surface decoration of their simple implements, clothing, or perhaps their own bodies, while in other places nearly every object shows that careful attention has been given to form, finish, and effective ornamentation. Practically everywhere, however, one finds some attempt to beautify something, though all else may be the simplest and crudest. I well remember visiting one village where life seemed reduced to the elements. The houses were mere thatched kennels almost bare of contents, the people also bare of ornaments and almost of clothing, yet nearly every man carried one or two finely ornamented spears—the only interesting objects found anywhere in the place. These were their most important possessions, hence worthy of special attention.

Usually the desire to beautify extends to more than one kind of object, yet in each region there will be certain articles to which attention is devoted. Coconuts are everywhere, at least in coastal regions. Coconut vessels and spoons are used nearly everywhere, but ornamented coconut vessels and spoons are made in only a few places, and the ornamented spoons are not made in the same regions as the ornamented vessels.

As we saw in the case of manufactured articles, certain regions, villages, and individuals specialize in definite kinds of work, artistic and otherwise. Usually the two go together, at least when highly developed, so that the best-made objects are also the nicest in appearance and decoration. The best-made house, however, is not always the one that is decorated, and the same is true of other things. Art as well as industry is also limited to the materials at hand. We could not expect to find decorated shell ornaments made in a mountain village, and nicely colored string bags are never seen on an oceanic island where suitable materials for both string and colors are lacking.

All this, however, does not account for most of the differences, which must depend upon the people themselves—their history, their interests, their social organization, and religious beliefs—and the time and leisure they have to carry on the work. Without undertaking to treat of these in detail, we might note the importance of religious beliefs. Much of the best work is connected with such beliefs. We need only think of the innumerable carvings, paintings, and designs representing deities and spirits of all kinds, especially ancestral, to realize this. What might be called religious art is in Melanesia of the greatest importance, yet, even though often the dividing line is vague, it does not by any means include everything. The natives have repeatedly told me that the meaning and purpose of certain designs on various objects were solely to make them “look pretty,” and I see no reason to doubt their positive assertions in this respect. They also freely acknowledged the religious or magical beliefs connected with other carvings and designs; for example, many spears from the region of Potsdam Harbor have rather elaborate incised designs that are purely ornamental, so the natives say, but near the head is often found a carved face or human figure which has a definite meaning and purpose. It represents the spirit which guides the spear to its proper destination.

Designs and Their Meaning

The natives apparently look at ornamental designs much as we do, though with a somewhat greater tendency to ascribe realistic names and meanings to them. In a design such as those on the spears mentioned above, the different elements have names, but while some of the names have a definite meaning, such as fish-bones, lizard tracks, etc., others are positively declared to be only the name of that particular design, such as our words "fret" and "scroll." Of course, carvings and designs which are clearly realistic are named after the original object. Other simpler, cruder, degenerate or conventionalized forms may also be so recognized, but here the natives may disagree as to what the design represents, or may say they do not know. Frequently I have been told, not only by one person but also by a group of persons whom we called in for consultation, that they did not know what a particular design represented—that it was made by another man or came from another place, and that no one but the maker knew what it meant. In some places, at least, a design belonged strictly to its originator, and no one else was supposed to use it unless he obtained that right by purchase, gift, or inheritance. Simple designs often served as trade-marks.

Artistic geniuses who originated new forms and styles doubtless occurred in Melanesia as well as elsewhere. The case is known of a man in one of the small islands north of New Guinea who far excelled all others of that region in the beauty and originality of his wood-carving, displayed chiefly in the handles of lime spatulas. He had no followers, as the period of European dominance was at hand and all native workmanship degenerated. Doubtless others in earlier ages were more successful in having followers and copyists, and so local or regional conventional types of art and design originated and developed.

To note all these different artistic areas with their chief characteristics as they exist at present or did exist

before they were destroyed by European civilization, is not possible with our present knowledge. Here we shall merely point out the more important regions.

Art in New Guinea

In New Guinea the most interesting region is probably the central Sepik River valley, which in the variety and excellence of its wood-carving and ornamented pottery excels all other sections of Melanesia. Particularly well done are the canoe prows representing birds and crocodiles, and many of the smaller figures, such as those on the ends of lime bamboos. Much of the wood-carving and pottery is also painted, white, red, yellow and black being the colors used. Many of the houses are elaborately ornamented. The natives of this region also model excellent faces of clay on skulls, and even make whole heads of clay.

The north coast on both sides of the mouth of the Sepik also excels in wood-carving which is illustrated especially on canoes, large drums (Figs. 40; 41, *b*), shields, spears, wooden vessels, head-rests, and a great variety of wooden faces (masks) (Fig. 45) and human figures (Figs. 46-48), usually with grotesque masklike faces. The figures are of all sizes, from small ones an inch or two in length used as charms to images over six feet in height placed in the sacred houses. These houses are often ornamented in most elaborate fashion with carved and painted figures and designs, among which the human figure is prominent, often in the round or in high relief. Animal figures are rare as separate carvings, but may frequently be seen in low relief on shields and other objects, especially in the handles of the large drums.

Pottery

Good pottery of different kinds is made in a number of places. It is not painted (though painted pottery from the interior is found on the coast), and is either plain or



Fig. 45. Wooden masks from the north coast of New Guinea. The length varies from ten to nineteen inches. These masks are part of the paraphernalia used in festivals and ceremonies.

with rather simple incised designs. Wood-carvings are seldom painted in colors, though often covered with a uniform dark red. Incised designs, especially scrolls, are much used, being common on shields, spears, drums, bowls, canoes, and even human figures. Characteristic of the region are soft, flat bags woven or rather plaited of flattened reeds and strips of bark and ornamented on one side with fine fiber fringes in various colors. These are made in only one district but are widely spread by trade. While in general this area may be regarded as extending from beyond Potsdam Harbor on the east to the neighborhood of Berlin Harbor on the west, there is much variation in detail from district to district.

Wood-Carving

There are two other regions in New Guinea where excellent wood-carving is done: Huon Gulf, especially the island of Tami; and the Massim district of eastern New Guinea, with the Trobriand Islands as its center. The



Tami Islanders are especially noted for their excellent canoes, large wooden bowls with faces and figures of men or animals in low relief, and carved wooden head rests representing men or animals. The work is excellent, and its quality does not seem to have deteriorated with the introduction of iron tools, as is the rule elsewhere. Similar but inferior work is done along the Huon Gulf coast. Here were found also in former days houses with walls of large planks ornamented with figures, in high relief, of fish, birds, animals, and men. Sacred images were also made, usually of light wood, in a very conventional form and painted white and red.

Incised designs are rare on the carvings above mentioned, but they occur on head-rests, bull-roarers, and especially on coconut cups and tortoise-shell arm rings, where the entire surface is covered with elaborate incised designs very characteristic of this region. Figures something like a conventionalized face, with sharp zigzags and toothed lines, are much in evidence. The interior mountain tribes make designs somewhat similar in appearance but different in detail. The designs are carved on bamboo boxes and tubes by cutting away the smooth



Fig. 46. A female figure carved in wood. About one foot in height. Such small figures are used as charms, though they are considered to be the abode of spirits. An example of the fine wood-carving found along the north coast of New Guinea, near the mouth of the Sepik River.

hard outer surface layer of the bamboo in various patterns. The coast people do not seem to have used bamboo in this way.

Incised designs, though of quite different character, form the most important element in the art of the Massim district. Here the designs show wavy lines with scrolls and interlocking curves. Both human face and bird motifs are more or less in evidence. These designs are found especially on wooden spatulas, clubs, paddles, and circular wooden bowls, all made of a hard dark wood. The design, especially in the case of the bowls, may be emphasized by having the incisions filled with lime. Figures of men and animals are also carved in the round, especially on the



Fig. 47a. The ancestral figure of a woman, carved in wood, with the skull of the deceased attached. Large figures of this type were placed in special houses, and were held in great veneration. They were thought to be the dwelling places of the spirits of the deceased.

Fig. 47b. The ancestral figure of a man. The face is masklike, representing a spirit. The string bag worn on the breast is the kind often worn by the men for ornament. The figure is about three and one-half feet high. Lower Sepik River, New Guinea.





Fig. 48. Side and front views of a small figure carved in wood, with masklike features. The figure is about fourteen inches high. Kirau, lower Sepik River, New Guinea.



handles of spatulas, clubs, and ornamented walking sticks. These figures are usually rather angular, however, and more or less covered with the incised designs. Very characteristic of this region are the painted wooden shields and small but elaborately carved dancing shields. These are also painted. Similar designs are found on canoe prows and ornamented house fronts.

This art has deteriorated considerably in recent years, and, though still practiced, has ceased to be a labor of love in the ornamenting of purely native objects and has become, instead, a means of raising ready cash to pay taxes. For this purpose all sorts of small objects of a kind never used by the natives themselves are carved and

ornamented with these incised designs and sold to tourists and collectors. Such objects are seldom made with the care bestowed on the older work.

Human Form in Art

In the Gulf of Papua on the south coast there is another center of artistic endeavors that find expression largely in carved and incised designs in which the human face plays the most important part, though the whole figure, and sometimes also animal figures, may be used (Fig. 49). The face is often much conventionalized, but can be recognized by the eyes and mouth, while the surface to be decorated is filled in with the conventional zigzags, lines, and curves

Fig. 49. A carved wooden seat with a back representing a human figure. Height about three feet. Chairs or seats are uncommon in New Guinea, usually appearing only around the north coast. Lower Sepik River, New Guinea.



of the region. On many small or less important objects these may make up the whole of the decoration. These designs occur on many objects such as small charms, coconut shell spoons, stiff bark belts, hand drums, wooden shields, and especially on the large flat memorial boards that are kept in the men's houses. The designs, if small, are brought out by filling the incisions with lime, while the large designs are usually painted with white and red, occasionally with black also, to emphasize the different parts. Similar designs are sometimes painted on bark cloth ornaments and on the bark cloth fronts and covering of the various kinds of masks used in the region. The human figure is sometimes carved in the round, but rather crudely. Often the body, and nearly always the face, is also painted.

A large share of the best in New Guinea art comes from the above-mentioned regions, but much excellent work is done elsewhere. Practically every region shows something of interest. Wooden objects are used everywhere, and some, at least, are usually more or less decorated with carved, incised, or painted designs. Lime gourds, coconut shell vessels, and pipes and boxes of bamboo are often ornamented with incised or burned designs. In most pottery centers some sorts, if not all, will be more or less decorated, usually with simple incised patterns. Pots from the Humboldt Bay region are often painted on the outside. Painted bark clothing and ornaments are found in a few places. Everywhere some woven or plaited articles of split rattan, fiber, or twisted string, such as belts, arm and leg bands, bags, baskets, and mats, are made, and these are often ornamented by varying the weave, by using different kinds of fibers or differently colored ones, or by applying colored fibers on the outside. Sometimes the surface may be painted; often it is ornamented with seeds, shells, or teeth. The geometric designs woven into the string bags (Fig. 50) are often interesting.

As the sacred houses are the most finely ornamented ones, and the sacred images and masks include much of



Fig. 50. Ornamented bags made of string of various colors. The men of New Guinea carry small personal possessions in such bags.

the best wood-carving, so also ceremonial objects of a more temporary character are often of much artistic interest. Here may be noted body and face painting, and ornaments of all sorts and sizes, often elaborate body and head ornaments of a light framework covered with flowers, leaves, colored fiber, painted bark cloth, or variously colored feathers; also house hangings and decorations, and especially constructed ornamental structures put up for the particular occasion. Much of this work is crude, but it is nearly always striking, and often beautiful.

Art in Admiralty Islands

The Admiralty Islands north of New Guinea form a different cultural area. The natives of these islands excel in wood-carving, especially in the manufacture of huge circular food bowls of a heavy dark wood (Fig. 51). These large bowls, sometimes over four feet in diameter, usually have attached to each side large handles of the same material finely carved with openwork scroll designs. Ornamental designs are often carved on the sides and around the rim. The color is a uniform black except that sometimes an incised design may be emphasized by white.

The same dark color is seen in the lime sticks or spatulas, which usually have the upper end carved to represent a human figure. There are also many carved human figures of various sizes up to life size or larger. These are usually painted red, with some of the designs in white. The same



Fig. 51. A wooden food bowl from the Admiralty Islands. Large bowls of this kind, used at feasts, are cut out of a single piece of wood, with the exception of the handles, which are carved separately and fastened on with a cement made of mashed *Parinarium* nuts.

is true of many other objects, such as the large ornamented wooden drums, the large beds or settees, and the carved and ornamented portions of spears, daggers, ax handles, and similar objects.

The natives make fine breast ornaments of round, polished shell disks overlaid with tortoise shell cut in open-work designs; also shell nose ornaments and arm rings with incised designs, and elaborate dancing aprons of small black and white shell disks, arranged so as to make various geometric designs.

Art in New Ireland

Another wood-carving center is found in north central New Ireland. Here are found more or less elaborate

carvings of a ceremonial or religious character. These are made of a light soft wood, and painted red, white, and black. Most of them are made only for the particular ceremony in which they are used, and after that are allowed to decay, or may be sold. The carvings are of many kinds. Some represent the human figure, others birds or various kinds of animals, and several may be combined into one carving, one being placed on or over the other, until a complex carving fifteen feet or more in length may be obtained. The carvings are usually in the round, but may be in low or high relief on planks (Fig. 55). Some are also in the form of masks with grotesque human faces.

In south central New Ireland the natives made stone figures one and one-half to three feet in height out of a soft chalky limestone. These are reported to have been made largely in one place near the stone outcrop. Aside from the wood and chalk figures there is little of artistic interest in New Ireland. Some ornamental designs, such as those on spears in the northern part of the island, and on clubs, paddles, and canoes in the south, are the most striking. They also had even larger and finer breast ornaments of shell and tortoise shell than the Admiralty Islanders.

Art in New Britain

In New Britain there is no outstanding art. Some wooden masks of southern New Britain are well done (Fig. 52). The Sulka make some striking ceremonial masks, both in form and color painting, and they also paint in colors on wood and bark cloth. Some peculiar tapa painting is found among the Baining living in the mountains of the Gazelle Peninsula.

Probably the most interesting art of the Solomons is the shell inlaying of the central and eastern islands. This is found on canoes, wooden bowls, combs, and other small objects. The surface of the wood is usually blackened to set off the white shell. Some excellent wood-carving, such

as ceremonial figures and canoe prow ornaments, is done in a few places. The carved and painted paddles and ceremonial clubs of Buka Straits are also of interest. Nicely ornamented plaited arm bands are made in the central Solomons, and colored ornamental fiber wrapping and plaited fiber covering are often found around certain wooden objects such as clubs; Bougainville bows, arrows, and spears; and Malaita combs.

From Santa Cruz we have finely plaited and woven baskets and mats with geometric decorative designs in black. Similar designs in black, or black and red, are painted on bark cloth, and especially on the characteristic dancing clubs. There is little representative art, and that little is very crude.

Art in New Hebrides

In the New Hebrides we find great differences between the different islands, and often between parts of the same island, which is the case in Malekula, where native art is best preserved, as it has been least modified by European contacts. In many islands there is little or nothing to indicate what the original native art was. Carvings and representations of the human figure and especially the face occupy the first place. Large wooden figures, in which the face is the most pronounced and sometimes the only part represented, are set up around the dancing or ceremonial grounds. Figures, especially faces, are carved on clubs, spears, and other articles, and carved or modeled in fiber on many ceremonial objects. Facial masks are carved in wood or modeled of fiber, gum, and clay. Faces are carved either in the round or in outline on the tops of the large upright drums.

These faces are also often painted, especially the modeled ones. Most peculiar figures, consisting chiefly of a head and face enlarged out of all proportion, are cut from the trunks of tree ferns, which are inverted and set in the ground with the large base uppermost. After being carved, they are covered with clay and painted.

The most interesting of the decorative designs are the geometric patterns painted on or worked into the small rectangular mats used as clothing by the women. Simple geometric designs are also worked into bead arm bands,

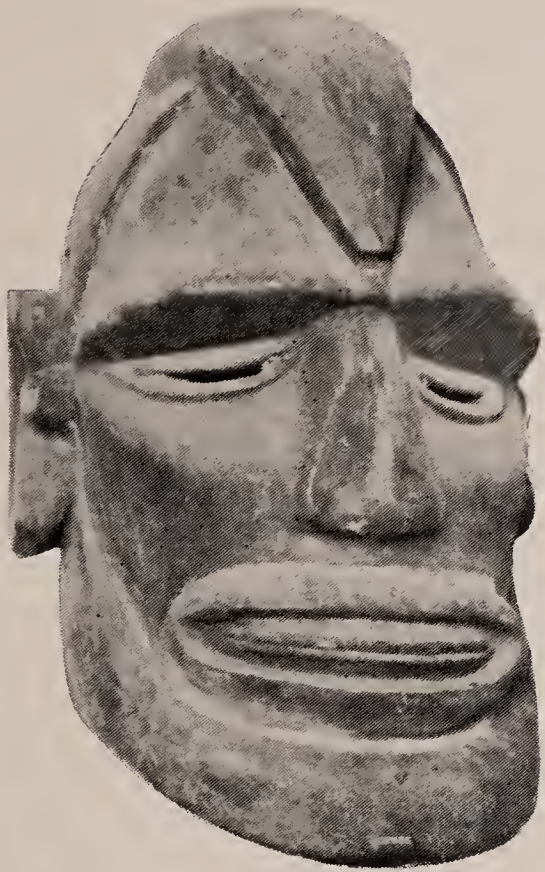


Fig. 52. A head carved in wood and hollowed out below so that it can be placed over a man's head and used as a mask. South coast of New Britain.

and scratched or burned on bamboo pipes. In general, however, the art of the New Hebrides is crude and lacking in variety.

Art in New Caledonia

The art of New Caledonia is somewhat similar, but even more limited than that of the New Hebrides, at least so far as we can tell at the present time, for in most of the islands the old objects have disappeared. Art in New Caledonia seems to have found expression almost entirely in wood-carving, as in the carved wooden planks set up on each side of the doorway of a chief's house, the peculiar ornament placed on top of the roof, and facial masks with the conventional and peculiarly shaped large nose so characteristic of the carvings from New Caledonia. Some-

times the house posts were also carved on the inside with the conventional human face or mask. The door plank had a face above, with geometrical designs covering the rest of the surface. The roof-carving also usually had a very conventional face but was often entirely composed of various geometric forms. Small wooden images were sometimes made. A small conventional face is also found on many of the light throwing-spears.

Another kind of art is represented in the ornamented bamboos with realistic figures and scenes scratched or burned on them, which apparently represent persons or objects the artist has seen. These may have been made for pleasure, or may have been of a historical nature.

Art in Fiji

Fijian art shows a closer resemblance to Polynesian than to Melanesian types. Here realistic wood-carving was rare, although the Fijians excelled in wood-working such as house- and boat-building, as well as in the carving of their household utensils and their weapons. A few of these were ornamented. The most noticeable artistic effects were in the painting and stenciling of geometric designs on tapa. The Fijians were also good at pottery-making, but here their efforts were directed more to the modeling of various shapes and forms than to decorative designs. A characteristic type and style of ornamentation were displayed in the wrapping of house beams and other objects with sennet in such a way as to show various geometric patterns, and in the various patterns made with plaited reeds, especially on the inner walls of the houses. They also excelled in plaiting baskets and mats, many of which had most elaborate ornamental borders. Pottery, tapa, and plaited work are still manufactured, but not with the care or elaboration of detail and design seen in the olden times.

Religion and Magic

Supernatural Powers

Thus far we have considered the native chiefly from a practical or material standpoint, but there is another element that enters into his life, often with controlling power. Life does not always go well with him and there are many things that he cannot understand. He feels himself in a world of mystery, with strange and inscrutable powers acting to bring about varying results that affect his well-being. Frequently I have heard the natives speak in hushed and fearful voices at some unknown sound, especially at night. Such mysterious noises they ascribe to supernatural beings, and even the well-known voices of birds or animals may in many circumstances bear them messages from the unseen, even as the owl's note in more civilized lands. They have no logically worked-out system of beliefs, no systematic theology, and their ideas in many respects are vague and contradictory; yet each tribe has a nucleus of beliefs and practices, passed down in stories, legends, and ritualistic formulas, which are often carefully taught to the younger generation.

Spirits

The supernatural and mysterious powers are usually personified in what we may call spirits, for want of a better term. They may be general or special, with an unknown, a distant, or a purely local abode. These beings are of all kinds, and the varieties which we find, often extremely local in character, are almost endless. Usually in each tribe there are a few particularly prominent ones

that are regarded as gods or deities, and they are often honored with special ceremonies. Local spirits are common and numerous. They are often of a malicious character, such as those abiding in the surf of a dangerous beach or in the rapids of a swift river. To these the native pays little regard unless he comes near their abode. Peculiar or noticeable objects of all sorts, such as large trees, prominent rocks, waterfalls, or rapids, are often supposed to be the abode of spirits. Sometimes there are local spirits that are friendly to the people of their region and hostile to outsiders.

Supernatural beings are usually thought of as having a certain bodily form more or less human or animal in shape or purely imaginary. Each tribe or people has its own ideas. In addition to the more important spirits, there are often whole groups of imaginary beings, some helpful, some mischievous, which may be compared to the nymphs, fairies, giants, dwarfs, or gnomes of European story.

Sometimes, as among the natives of the Purari Delta in Papua, all objects are regarded as having an indwelling spirit or *imunu*. The mountain Kai, north of Huon Gulf, have somewhat the same idea, but carry it still further, regarding the immaterial self as permeating every part of an object and continuing in every fragment. Something of the same idea is present in all offerings to the dead either of food or of objects left on the grave. The spirits eat or use only the ghostly counterpart of such objects, not the objects themselves.

Ghosts

In addition to the supernatural beings or spirits proper, there are also the spirits of the dead, or ghosts. The offerings of food and various objects placed on the grave are often rather an expression of kindly regard for their comfort in the spirit world than a plea for their aid or assistance; yet if the ghosts are not satisfied with the gifts and

attentions they receive, they may take vengeance on those who are supposed to furnish these things—even as a man might be wrathful if his dinner were not properly served. The ghosts are often particularly touchy about what is due them, and it is well to be very careful. There may also be hostile ghosts and ghosts of enemies, which must be appeased or prevented by one means or another from doing injury or working harm.

Fig. 53. An ancestral figure with skull attached. The face modeled on the skull is made of a mixture of clay, sap, and fiber, and is painted with a design representing the rank of the deceased. The body is made of sticks covered with fiber. The figure represents a deceased person of high rank and it is revered and feared by his family and friends, for the ghosts of such persons are supposedly able to wield great influence in the affairs of the living.



In some places all ghosts are regarded as harmful, and an effort is made to drive them away as soon as the person dies. In other places they are looked upon as friendly, and the assistance of the ghosts of friends and relatives is often sought by prayer and offerings.

In many places the ghosts of prominent and influential persons are supposedly able to give great assistance to the living, and are held in high honor and esteem. Images are often made to represent them; or their skulls, and occasionally other parts of the skeleton, may be preserved. In south Malekula the face and features of the departed are modeled over the skull (Fig. 53). This is rather crudely done in a composition of fiber, gummy sap, and clay, and sometimes, in the case of an important man, is set on a figure or manikin. On the Sepik River in New Guinea the skulls are also preserved and the features modeled on them in clay. In many other places the skulls are kept and frequently ornamented or decorated in various ways. These ancestral skulls should not be confused with those obtained from enemies and kept as trophies.

The lives of ghosts as they exist in the memory of the people seldom extend over a generation or two, and they are forgotten as memory of the departed fades away and new ghosts take their places. Occasionally the exploits of a man of great influence and power may be perpetuated in story and legend and he may come to be regarded as a tribal ancestor and so continue to receive honor, but in such a case he is seldom regarded as taking any active interest in human affairs and so is not called upon for assistance.

In some places, especially in the Solomons, ghosts are much more important in the native life than other spirits, so that all spirits which are feared or to whom prayers and offerings are made, even those with such general power as controlling the fortune of war, are regarded as once having been men. The few that have become promi-

nent in this way thus live on for generations in the minds of the people.

Magical Forces

We often find a belief in a supernatural being who was concerned in the creating of the world, or of things as they exist at present. Such a being is mythological rather than religious, and he is usually regarded as having nothing to do with present-day affairs. Throughout most of eastern Melanesia, however, there is believed to exist a mysterious something which is the source of all power and accomplishments and which acts only through objects or personalities in which it dwells. This power or energy is known as *mana*, and every ghost or spirit worthy of consideration has it. Every successful man has it, and the desire and prayer of every man is to acquire it in ever-increasing abundance. Objects out of the ordinary, such as peculiarly shaped stones, have *mana*. It is a power for either good or ill, but nothing of importance can be accomplished without it. If a man is successful his good fortune is due solely to his *mana*, which he is supposed to acquire from the spirits. If his crop is especially good or above the average, it is not due to his care and industry, but to *mana*, which may come from some peculiar stone buried in the fields. The presence of *mana* is known by results. If a man finds a peculiar stone, he may think it has *mana* but will try it out to be sure.

Codrington says of *mana*: "Wizards, doctors, weather-mongers, prophets, diviners, dreamers, all alike everywhere in the islands, work by this power. There are many of these who may be said to exercise their art as a profession; they get their property and influence in this way. Every considerable village or settlement is sure to have one who can control the weather and the waves, some one who knows how to treat sickness, some one who can work mischief with various charms. There may be one whose skill extends to all these branches; but generally

one man knows how to do one thing and one another. This various knowledge is handed down from father to son, from uncle to sister's son, in the same way as is the knowledge of the rites and methods of sacrifice and prayer; and very often the same man who knows the sacrifice knows also the making of the weather, and of charms for many purposes besides. But as there is no order of priests, there is also no order of magicians or medicine-men. Almost every man of consideration knows how to approach some ghost or spirit, and has some secret or occult practices."

Magic and the use of rites, spells, and charms play a large part in the lives of all these people, in New Guinea as well as in the eastern islands. The power inherent in a magic rite or spell to bring about results, either directly or through some spirit or ghost which acts because of it, existed from the beginning as part of the rite or spell. How it originated or acts does not concern the natives; sufficient that it actually works and accomplishes the end desired.

Magicians

Magic has been divided into white and black, according as it works for good or evil, and both sorts are prevalent in Melanesia. The extent to which white magic is practiced varies much in different regions, but usually no important act of any sort is begun until the proper rites and ceremonies have been performed, and the magical spells and formulas pronounced. While practically every one knows some spells to assist him in minor matters, for important affairs there are always some men with special knowledge such as the medicine-men and rain-doctors, to whom the individual or the tribe can appeal for help. Of course, having power over these things, such men can bring about evil as well as good, but in native practice the two are seldom united in one person, so far as regards practice within the tribe. All will try to work evil on the enemy, whether tribal or personal.

One of the most feared men in any tribe, however, is the one who is regarded as working evil. Such a man is usually called a sorcerer in English, and is thought of much the same as witches were by our ancestors. In Melanesia the knowledge of magical spells and incantations connected with the more important rites and matters of general import is usually held by the men and passed on to their heirs, or occasionally sold for due consideration. Of course the women, and even the children, have certain formulas and spells, but the more important magicians and the sorcerers are nearly always men.

The general belief in the ability of the sorcerer to cause the death of whomsoever he may wish to destroy, unless the victim can get more powerful magic to work in his favor, may, if the sorcerer be unscrupulous, work great harm in any native village or community.

Magic in Sickness and Death

All sickness and death, except from such evident causes as blows and spear thrusts, must be due, according to native belief, to unnatural or supernatural forces controlled and brought to bear on this particular case by some individual. This belief alone leads to unending trouble, as no one can get sick or die without his friends or relatives making an endeavor, at least, to find out who is to blame and then to take vengeance. But a powerful sorcerer may use this belief to his own advantage by exacting blackmail and threatening death if his wishes are not granted. Also, any individual who may feel himself offended or injured by another person will offer to pay the sorcerer to work his evil magic against the offender. The sorcerer may accept pay for this, or he may notify the intended victim of the offer, to see if he in turn will not make a larger offer to protect himself, and turn the tables against the first party. If he does this, number one will then be notified so he can raise his offer, and thus it may go on until the highest offer wins.

Such things become known in time, and a sorcerer of this sort may terrorize a whole village or community. He may even boast of his power and what he has done. No one feels safe, not knowing when the evil powers may be directed against himself. If it gets too bad, some one in desperation may put a spear into the sorcerer some dark night, or the village elders may even get together and appoint one or more responsible individuals to remove the danger from their midst. This must be done before the sorcerer becomes aware of his danger and can turn his evil magic and powers against them, for they all believe in his power and would die if they thought he had decreed it. Of course, if any one has stronger magic on his side, he can safely resist anything of this sort, but no one knows where to turn to find some one with magic sufficiently strong to resist that of a sorcerer who has risen to fame by repeated successes.

Effects of White Man's Law

The native way of escape was simply to kill the sorcerer when conditions got too bad. Under the white man's administration, however, such action is regarded as murder. The poor native is often between two fires. The sorcerer rejoices in his relative immunity from private vengeance, and becomes more insolent than ever. Finally some public-spirited individual sacrifices himself for the good of the community, kills the sorcerer, and goes to jail as the result. In Papua a surprising number of the inmates of the jails are self-confessed murderers of this sort—quite respectable and honorable men according to their ideas and so regarded by the white men in spite of the law; they are often given almost complete freedom, with positions of responsibility, by their white jailers.

As the white man's law does not recognize sorcery as a crime, or at least does not admit that a man can be killed by magic, the poor native is often in a tight fix. Even if the sorcerer is arrested, he may get off with a mere warn-

ing to behave himself, which simply leaves him to work vengeance on his accusers. But sometimes he does not escape. Judge Murray, in his book on Papua, tells of a village constable who took the law into his own hands. A village constable is a reliable man in a village who has been appointed as the government representative in that village. This constable "had arrested a sorcerer and was taking him up the river in a canoe to the magistrate. While they were in the canoe the sorcerer took a long string and a number of small pieces of stick, and said to the village constable, 'You remember your eldest brother? I killed him. And your sister? I killed her, too. And I killed your other brothers, and your father and mother, and your friend so-and-so,' tying a piece of stick onto the string, each time that he mentioned a murder. The village constable stood it until the seventeenth piece of stick, and then he and his crew seized the sorcerer and held his head downwards in the water till he was drowned." The judge remarks that he was strongly tempted to bring in a verdict of "Served him right!" but does not say that he did so.

On the other hand the sorcerer may get into trouble by respecting the wishes of the white man's government, which of course frowns on all practice of black magic. As one complained to Judge Murray, "The village people come and ask me to make Puri puri [evil magic] for them. If I do the Government gets 'wild' and puts me in jail; if I say I won't they think that I am making Puri puri against them and may try to kill me—so what am I to do?"

Ceremonies and Ceremonial Objects

Dances, festivals, and ceremonies of various kinds take up considerable time in the life of many native tribes. All the natives enjoy dances and festivals at certain times, and ceremony enters more or less into many of their occupations and recreations, but the development of special elaborate ceremonies is limited to particular areas and is extremely variable in details, though the underlying ideas are often similar. In one region we find numerous elaborate ceremonial objects, such as carved and painted figures and masks and costumes of various sorts, while in near-by regions such objects may be very different in appearance, much simplified, or entirely lacking. There may be a general similarity throughout a wide area, but separate districts will work out the details differently, with varying degrees of elaboration; for example, wooden masks more or less similar in character are widespread on the north coast of New Guinea, but the elaborate feather head-dress of Hansa Bay, where the wooden mask or face is only a small portion of the whole costume, is limited to a few villages. In other districts the costume worn with the wooden face or mask is very different.

Ceremonies are of all degrees of complexity. They vary from simple ceremonial acts performed by individuals, to long-drawn-out and elaborate festivals, often continuing for days or weeks, in which many villages or even neighboring tribes unite. We might regard the latter as made up of a number of separate ceremonies, and yet they all belong together and are designated by a specific

name by the people themselves; therefore, the term "ceremony" had better be used for the complex as a whole. These ceremonies are of many kinds and the frequency of their celebration varies greatly. Many are held annually and are in the nature of an appeal to the special spirits having charge of such matters as the gardens and food supplies. Supplications are made for abundant crops, such as a large yield of yams or of taro, or for success in hunting turtles or in catching some important kind of fish. Others might be regarded as thanksgiving feasts for bountiful harvests. There is usually a definite time in the year for the celebration of such ceremonies.

If the villages are small, neighboring villages may unite in the celebration, which will then be held in the separate villages in rotation, so that the burden of furnishing food and entertainment will occur less frequently for any one particular group. Often many months are needed to gather together sufficient food for such occasions, as there is much feasting at the time and great quantities of food are distributed to all present to be taken home after the ceremony. Usually very little that is edible remains in the village when the whole performance is over. The giver of the feast, whether individual, clan, or village, always takes great pride in making as great a display and distribution of food as possible.

In many places there are important ceremonies connected with the initiation of boys and of girls also. These may be limited to puberty ceremonies, but often there are also other occasions when ceremonies are held, such as the giving of names, piercing of ears or nose, blackening of teeth, and circumcision.

Age Groups

The young people may also pass through a number of age groups or classes, as is the case around Merauke in southern New Guinea, and suitable ceremonies must be performed as the individual rises from one class to the

next. In some of the New Hebrides Islands we also find a series of ranks demanding proper ceremonies with each advance.

There are also ceremonies connected with death and the disposal of the dead and the welfare of the spirits or ghosts of the departed.

The more important ceremonials, however, are those of a religious character, and the most striking ceremonial objects are the masks and figures representing the various spirits, or the supernatural beings that are supposed to visit the people on certain occasions. Naturally those who are responsible for the performance wish to make it as impressive as possible, and to magnify the power and majesty of the deities whom they serve and interpret to the people.

Masks

The huge feather masks (Pl. 2) at Awar in Hansa Bay, New Guinea, represent local deities who visit the village for a number of days and appear to the people morning and afternoon (unless the wind happens to be too strong), when they, with their attendants, parade through the village, dancing and singing. The rest of the time they stay in one of the sacred houses, which is surrounded by a high leaf fence that prevents those outside from seeing anything within. The masks are put together within this enclosure. A light framework is made of strips of bamboo and to this the feathers are fastened by sticking their stems into pieces of pith tied to the frame so as to cover it. Several months are spent in this work, even though the feathers are carefully preserved from year to year.

When everything is ready (and this means also that a huge supply of food has been gotten together in the village) it is announced with great beating of drums and blowing of shell trumpets that the deities have at last arrived and will soon appear to the assembled villagers and

visitors. The sound of the shell trumpet is supposed to be the voice of the spirit, or at least to indicate his presence.

As I observed at Awar, when the time of their sojourn in the village drew to a close (and the food supply was about exhausted), it was announced after the afternoon performance that the deities were leaving to return to their home, which was in a lagoon at no very great distance. All the women, children, and uninitiated left the place and disappeared. Soon with great blowing of trumpets the masks came out of the enclosure and, headed by the trumpeters, started to leave the village. The masks were then ceremonially speared and dismantled, the framework was destroyed, and the feathers were carefully taken off and packed away for future use. The trumpeters, however, continued on toward the lagoon, the sound gradually getting fainter and fainter as the spirits retired to their proper abode. By the time the sound ceased, all traces of the masks had been removed from sight, and the uninitiated were now permitted to return. They had heard, even if they could not see, the spirits' departure.

On the south coast of New Guinea in the Gulf of Papua and westward there is extensive use of ceremonial figures and masks, varying greatly with the locality, both as regards the make-up of the masks and the ceremonies and ideas associated with them.

One type has its center of development at Orokolo. Here there are three general kinds of masks. Two, of a sacred character, are known as *kovave* and *semese* masks. They are both made of a framework of split cane or rattan, covered with painted bark cloth. The *kovave* masks are conical, with feathers at the top and a face painted or worked on one side, usually showing an open mouth with teeth, or a projecting snout like a crocodile's, with open jaws. Fiber is attached around the lower edge to conceal the body and upper part of the legs of the wearer. The top extends several feet above his head.

The *semese* masks are rounded at the base, to set over the wearer's head, but the whole front of the mask is flattened, forming a rather narrow oval often ten or more feet in height. The lower part also bears a crocodile jaw, while the flattened surface is covered with an elaborate painted design, often totemic in character. Narrow strips of cane or rattan are sewed on the surface outlining the different parts of the design before they are painted, and feathers are arranged around the edge and on the long slender tapa-covered pole that usually projects above the painted flat surface.

Kovave is one of their chief gods whose home is in the mountains. At a certain time during the initiation ceremonies of the young men he is supposed to visit the village, and among other things give good advice and instruction to the initiates. Before he comes he sends a messenger who wears the *kovave* mask and rushes through the village accompanied by two or three men shouting out the good news. The period of initiation lasts several months, during which the boy initiates must remain in a special house used for that purpose. During most of this period they must not be seen or leave the house unless concealed by a mask of the *kovave* type. Each boy has a mask of his own hanging up in the house.

The *semese* masks appear at the *semese* festival, which was formerly celebrated at Orokolo every three years. It was a most important festival and was attended by friends and foes from far and near. As it was totemic in character its celebration probably served as a recognition of totem kinship. Mr. J. H. Holmes, who lived for many years at Orokolo, says of it: "It was a material or concrete expression of their beliefs, a summary of all the things which made up their life, a public recognition and confession of their obligations to beings outside their present existence, and as an event sacred to all the people of their cult it was an occasion when the hatchet should be buried, old feuds forgotten and new hates glossed over for the time being.

“As a festival it usually continued about ten days, and during that period there were daily parades of masks, totem-effigies and groups of actors presenting in tableaux one phase and another of the life of the people. The masks were a material expression of homage to the ancestors of the tribe; the totem-effigies reminded the people of their obligations to their cult; the dramatic tableaux portrayed life from its geniture to its decease; the *tout ensemble* presented the pageant of life as it was known to them.”

Holmes' characterization may be somewhat idealized. To most of the natives it was doubtless the occasion of a glorious good time, mingled with a certain amount of respect for, and considerable fear of, the supernatural beings represented and honored. To the old men and religious leaders it was undoubtedly a most sacred occasion, in spite of the mummeries and the endeavors made to deceive the uninitiated in regard to masks, bull-roarers, and similar objects.

In the Purari Delta west of Orokolo the masks used are very similar, but the ideas underlying their use are quite different. Here the chief deity is called *Kaia-imunu*, “Sky-soul,” or “God of the Sky.” He is represented by large wickerwork animal-like figures with body about five feet high, and wide open mouth. These figures are used in the initiation ceremonies, and at other times are kept in a closed secret room at the rear of the huge *ravis*, or men's houses. No ordinary man may even go near this enclosure. Once I was allowed to enter one of these rooms, after much discussion among the men of the *ravi*, but only after they had summoned a very old and sacred man to accompany me, as none of those present could enter, or even go near the entrance.

Back of Dallmann Harbor and inland on the Sepik River is found another type of mask. It is made of woven rattan, something like basketwork, and often has the long



Fig. 54. A woven rattan mask from Goari Bari, on the Gulf of Papua.

pointed or curved nose so common on the wooden masks and carvings of that region. Similar masks are also found on the south coast region of the Gulf of Papua (Fig. 54). These masks are usually painted, often over a thick covering of clay.

Near the mouth of the Sepik River are found large carved wooden animal figures, hollowed out underneath, which are also used in connection with the initiation ceremonies.

Another region where there are masks notable for size and variety is in the Gazelle Peninsula of northern New Britain. The Baining of the mountains make variously shaped masks of a bamboo or cane framework covered with painted bark cloth. Sometimes these represent huge crudely formed human figures, fifty feet or more in height.

The masks of the neighboring Sulka are very different, not only in shape but also in construction, as the covering material is composed of narrow strips of pith carefully tied to the outer surface of the framework with fine fibers. Various designs are painted on the strips, red being the most prominent color. There are several different kinds of masks, one of the most striking having a large flat circular top fastened above the more or less conical head-piece something like a huge umbrella. The head piece is often shaped to represent some animal, or human or animal forms are represented on each side. These masks, though used only once, represent a great deal of work, and may take months or even a year or more to make.

Still another type of mask is found in the northeastern part of the Gazelle Peninsula, where it is worn by the members of the *duk-duk* secret society when they appear in a public performance or ceremony. These masks, conical in shape, are made of a bamboo frame covered with bark cloth or some fibrous material, with a fringe of leaves around the bottom. They cover the head and shoulders something like a huge fool's cap, while the rest of the body is concealed by many layers of leaves, so thick that the upper ones project almost at right angles. There are two varieties of these masks: the *duk-duk* proper, rather tall and slender; and the *tubuan*, shorter, with a sort of face having two large circular eyes painted on one side and a large bunch of white feathers on top.

A few rather crude wooden face masks are also found in this region, and in one district a peculiar mask made of the front part of the skull with the facial bones and lower jaw. Over these the face is modeled and painted. The modeling material is made of crushed *Parinarium* nuts,

and becomes very hard when dry. To this is often attached the hair of the beard and top of the head. These masks are used on various occasions, but apparently they have no special significance.

Ancestral Figures

The high development of artistic wood-carving in central and northern New Ireland has already been mentioned. Most of these carvings find their use in connection with the ceremonies held for the dead. In central New Ireland peculiar male ancestral figures called *uli* are used. The well-developed breasts indicate that they are well nourished. The small figures attached to them, especially on the shoulders, usually are illustrative of some story or legend. These figures are sacred, no woman being allowed even to see them. When used they are set up in a special enclosure where they remain until the ceremony, or series of ceremonies, is over, when they are carefully wrapped up and put away to be used at a future time. Such ceremonies may continue for a year or more and are performed only for important chiefs or heads of totemic groups.

In northern New Ireland the carvings are of many different kinds, often very elaborate, and their meaning as well as their appearance is quite different from that of the *ulis*. In this region there is held an annual festival in honor of the dead, and these figures, known as *malagan*, are made for this particular occasion only, being sold, thrown away, or destroyed after the ceremony. Their meaning is not entirely clear, as the types seem to go back to an earlier moon cult, the details of which have been partly forgotten except as preserved in their stories and myths. The carvings follow conventional lines, and the larger human figures, at least, are regarded as representing the deceased. These usually have an elongated base, so they can be set upright in the ground. Sometimes several figures are carved, one above the other, making



Fig. 55. Carved and painted boards used in ceremonies in honor of the dead. They represent ancestors or mythological beings and are ornamented with birds, snakes, and fishes. The meaning is obscure. The boards are exhibited on the back wall of a special house built for the occasion.

a column fifteen feet or more in height. There may also be a number of carved planks of varying length on which human figures, birds, fish, and snakes may be represented (Fig. 55). These may represent some myth or possibly a recent occurrence. They are exhibited on the back wall of a special house or open shed built for the occasion.

Masks

There are also various kinds of masks and head pieces. One kind, usually with a peculiar crest imitating the types of hairdressing used for mourning, is worn by the men in their dances. Other sorts, much heavier and more elaborate, are worn only on special occasions, or are set on crude bodies in the house in which they are exhibited. These often have elaborate ear and nose pieces. Separate but similar ear and nose pieces may be worn by the dancers on certain occasions.

A small carving representing a bird, especially the hornbill, is sometimes carried in the mouth by the dancers when executing imitative or totemic dances.

The regions already considered illustrate the more elaborate development of masks and similar objects. In eastern Melanesia they are, or were (for they have now almost entirely gone out of use), less common. Where there were secret societies, a mask of some sort was used by the members to conceal their identity when they appeared in a public performance. These masked figures were usually supposed to be ghosts. Such masks are known from New Britain, as already mentioned, the western Solomons, Florida, the Banks Islands, and the northern New Hebrides. In southern Malekula masks and various objects of a peculiar sort were used in the dances and ceremonies connected with what might be called the degree-taking, as one rises from a lower to a higher rank. These masks are made of a fibrous base held together with gummy sap and clay, painted, with

red predominating, and often supplied with projecting boars' tusks on each side.

The New Caledonians formerly had a mask with a carved wooden face of the conventional type of that region. The body was concealed by a thick covering of dark reddish brown or black feathers on a network attached to the lower edge of the head piece. The real meaning of these masks is in doubt. The masked figures appeared at dances and festivals. Their use seems to have been limited to men of influence, who might in this way increase their power. Some regard these masks as evidence of a former secret society, having survived because of their play-acting interest.

Other Ceremonial Objects

So far we have mentioned but a few of the more striking ceremonial objects of Melanesia. Every region, sometimes almost every village, has its own peculiarities. The gratifying of the appetite, however, is an important item in every native gathering, and might almost be regarded as holding first place. The distribution of food at any public gathering is an important ceremony in itself, and demands great tact and knowledge to avoid giving offense to some jealous recipient who might regard himself as slighted. Of all foods pork is the most highly valued, and the pig easily holds first place at all festivals. In the New Hebrides the pig has a special ceremonial value on account of its use in the degree- or rank-giving rites and ceremonies. Of special interest are the intersexual pigs, so highly valued in some places, and the importance placed on the extent of tusk development. These sometimes grow to such an extent as to make three complete coils, though even one full circle is regarded as of great value. To accomplish this result the upper tusks are knocked out so the lower ones can grow without being worn down. Such pigs are usually kept tied up, often in the house, and fed soft food. They may be kept this way for many

years, as the longer and more coiled the tusks become, the more valuable the pig. After certain ceremonies, during which many pigs are killed, the lower jaws are cleaned and placed on exhibition in a shed at one side of the dancing grounds.

Burial and Mourning Customs

Disposal of Dead

The great variability in native customs was impressed upon me early in my sojourn in New Guinea when I learned how the dead were disposed of in three neighboring villages. To acquire accurate information on this subject is not always easy, because, since the white man's government does not approve of most of the native customs in this respect, natives within reach of such authority deny knowledge of any other way of burial than that approved of by the government. A local trader, however, helped me and supplied much of the information, as he spoke the native language and had lived many years in close association with the people of that neighborhood.

There were three native villages situated on or near a lagoon on the north coast of New Guinea, some twenty-odd miles west of Berlin Harbor. The lagoon was only a few miles long. On the coast near its eastern end was the village of Arup. On an island in the lagoon there had been, up to three years before, a settlement called Warapu, but at this time these people were living on the mainland back of the lagoon, as an earthquake had caused the island to sink several feet below sea level. A short distance beyond the west end of the lagoon, on the coast, was the large settlement of Sissano. A narrow channel back of it connected with the lagoon, so that all three villages were within easy reach of each other.

In Sissano the dead were usually buried under the houses, the floors of which were several feet above the ground. For one and a half to two days before burial

the body was kept in the house dressed in its best clothes and ornaments and set in a nearly upright position against the house ladder or some similar support. This was a period of general mourning and wailing by relatives and visitors. At the end of this period the body was wrapped in coconut leaves, and then in the broad thin leaf-sheaths of the nibung palm. The whole bundle was then tied up.

The grave was marked by sticks set up at the head and foot, and a small fire was kept burning on it for a month or more. Then it was opened, and the skull and small bones (radii) of the arms removed. The skull was placed with others in the men's house, while the radii were taken by the nearest relatives and used as charms or magical protectors from all sorts of danger.

In Arup the dead were not buried but were wrapped up in much the same way and suspended in the family house over a small fire, where they stayed for a year or more, until only the bones were left. The skull and radii were then taken out and the other bones buried. The house continued to be occupied by the family during this time, and the leaf-sheath wrapping was so arranged that the body juices ran down into a vessel, and were later mixed with sago and consumed by the nearest relatives.

The Warapu, on the other hand, placed their dead in small houses about three feet wide by six long and two to three feet high, set up on high posts outside the village.

These three general methods, with all sorts of local variations, were the most common ways of disposing of the dead in New Guinea. Burial, either under or near the house, was common. The position of the body and the way and extent to which it was protected from the soil varied greatly in different places. A small hut, shelter, or enclosure of some kind was usually built over or around the grave. Various possessions of the deceased were often placed on or around the grave, but valuables were seldom buried with the body, although it was elaborately decorated before burial.

In many regions the bodies were not buried but were placed outside the village, sometimes on the ground but usually on platforms or in trees. While some sort of box or wrapping was commonly used, the bodies were often exposed, and those of old or insignificant folk simply thrown into the bush. Very often, in fact, there were several ways in which the dead were treated, depending on their standing in the social group, and the three general types above mentioned might be practiced by the same people. If the body was left in the house, this was usually deserted. Sometimes in such a case, or when there were platform burials near the house, the whole village was deserted for a time.

Keeping the body in the dwelling house does not seem to have been very common, however. Lorentz speaks of bodies at Mapar near Geelvink Bay that were kept in the house over an open fire until they dried into a sort of mummy. In certain islands of Torres Strait fire was also used to help dry the body, from which the internal organs had been previously removed. These so-called mummies were fastened upright to the center post of the house and left there until they fell to pieces.

A number of travelers in different parts of New Guinea have reported dried bodies in the houses, usually tied up in matting. But the custom was probably much more common than has been reported, as the natives soon found that the white man did not approve of such customs, and when one visited the village the bodies were concealed and all knowledge of them denied.

The skull and often some of the other bones were very frequently removed, cleaned, and preserved in some way after the body had decomposed, whether buried or otherwise treated. In some places the skulls of important men were kept in the men's houses. These skulls were often decorated in various ways, or the features modeled on them; we find these practices on the Sepik River. Occasionally they were used as the head pieces of carved images (Fig. 46, *a*), placed inside wooden images, as

around Geelvink Bay, or kept in palm-leaf baskets hung up in the family house. They were also put away in caves and clefts of the rock. Other parts of the skeleton, if preserved, were either used as charms, as already mentioned, or worn by the near relatives as a sign of mourning. The lower jaw was often used in this way.

Throughout the other islands of Melanesia were found the same general types of burial as in New Guinea, though the details varied and other methods occurred in many places. Burial in the sea was common, the body being wrapped up and weighted with a heavy stone. Cremation was practiced in a few places, as in New Hanover, northern New Ireland, around Bougainville Straits, and in the southeastern Solomons. In the Rossel Mountains of southern New Ireland the body, in a sitting position, was completely covered and packed in chalk powder, wrapped in leaves, and set up on the crossbeam of the house under the roof. In this way it was apparently kept for years.

As in New Guinea, there was continued variation from place to place and from island to island, no one type having a wide, unbroken area of distribution. Usually more than one method was practiced by the same people. The type adopted sometimes depended on the sex of the deceased, but more often on his rank and standing in society. Ivens mentions the following forms practiced by the natives of Ulawa and Sa'a in the Solomons: (1) Exposure in a canoe; (2) throwing into the sea; (3) exposure on a stage or in the beach altar; (4) interment.

The central and eastern Solomons show many interesting variations in burial customs. As an example of the variety here found, the following different kinds of burial were practiced in San Cristoval, as enumerated by Fox.

1. Burial on a mound of stones and earth called a *heo*, either in a shallow grave, or in a cave, natural or artificial, in the mound.
2. Burial in a grave dug in the ground, either (a) extended, (b) sitting, or (c) standing.
3. Burial in the ground with the head above ground.

4. Burial sitting in a grave with a hollow tree enclosing the person from the waist upwards.
5. Burial on a tree platform.
6. Burial on the branches or roots of a tree, extended or sitting.
7. Burial in a hollow tree, usually standing.
8. Burial in a cave cut in a living tree.
9. Burial in a large bag sitting.
10. Burial sitting above ground round a tree.
11. Burial in a food bowl, *dara* or *hohoto*.
12. Burial in a canoe (embalmed).
13. Burial in a natural rock cave.
14. Burial in a cleft in the reef.
15. Burial on a rock in the sea, or on land; extended.
16. Burial in the sea, either (a) extended, (b) sitting, or (c) standing.
17. Burial in the wooden figure of swordfish or shark.
18. Burial sitting, standing, or extended (exposed) in the house or *oha*.
19. Burial in a hollow bamboo set up on a *heo*.
20. Cremation.
21. Burial in a sago tree hollowed like a gong, in the ground.

Of these different modes of burial some have several further modifications; for example, a man buried in a cave may be buried in various positions and may be embalmed.

While not all of these methods were practiced by the same people, most of them were, and a man often specified before his death in what manner he should be buried.

Preservation of the skull and other relics was even more common than in New Guinea, especially in the central and eastern Solomons. In Vella Lavella skulls were often decorated with shell rings and other ornaments of shell and placed in special stone cairns, also sometimes in caves and holes in rocks and cliffs. Farther east they were often kept in the house in carved images of fish. Other relics, such as leg and arm bones, a lock of hair, a tooth, or a finger nail, were often preserved as mementos.

Sometimes, as in parts of the northern New Hebrides and eastern Solomons, the bones were worked into points for spears and arrows. In southern New Ireland and parts of New Britain the upper arm bone was often stuck on a spear.



Fig. 56. Mourning costumes worn in New Guinea. The man on the left wears a garment of shredded leaves and the woman (right) is wearing a hood and cape woven of string.

Mourning Customs and Costumes

As soon as death occurred the nearest relatives, especially the women, set up a loud wailing, which was continued with more or less regularity until the body was disposed of. The attendant funeral ceremonies varied greatly, depending on the locality and rank of the deceased. Usually the body was specially dressed and ornamented, and laid out, set up, or stood up in the house for all visitors to see before it was prepared for burial. This was usually the occasion for a feast in connection with the other ceremonies.

Mourning customs and costumes (Fig. 56) varied greatly from place to place. The nearest relatives, especially the mother, wife, or husband, expressed their grief in various ways. A common sign of mourning was to smear the body with mud or light-colored clay, or blacken it with charcoal or soot. Often a mourning costume was worn, sometimes completely covering the body. It consisted of old and ragged nets, long fiber skirts, or mats of various kinds.

Some relic of the deceased was often worn. A woman might wear the rolled-up loin cloth of a husband or son around her neck or a near relative might use the lower jaw, after connecting the ends with some sort of fiber band, as an arm ornament.

The personal possessions of the deceased were often placed on the grave. In some places there was general destruction of a man's property. His gardens were overrun, his yams dug up, bananas and breadfruit trees cut down. Usually this destruction was only partial, however.

What Holmes says of the natives of the Gulf of Papua might be said also of most, if not all, of the Melanesian peoples:

"Death and all that belonged to it was full of significance to these people. They were not afraid of it *per se*; they had no dread of its approach; in fact, given provocative reasons, they welcomed it, and I have known several young men and women just lie down and die, as anyone lies down and sleeps. It was not suicide by poison; there was no violent act on their part or that of anyone else; they just died. They grieved, they mourned, as people of a higher plane do; but the haunting concern of their grief and their mourning was to bid farewell to the spirit of the deceased in such a way that there would be no prospect of his returning, in the form of a ghost, to annoy them or to bring calamity upon them for having failed to do their duty to him when he left the body of their kin."

Appendix

Physical Anthropology

Since Dr. Lewis prepared his guide book in 1932 detailed measurements have been taken on the skulls which were brought home by him. This research has been published in part by this Museum (Hambly, 1940, 1946). The work, which is statistical, deals with a mathematical comparison of numerous average measurements for various groups of Melanesians. Furthermore, the same kinds of average measurements have been compared, trait by trait, for various Melanesian groups to show the relationship in head form that exists between these and (1) African Negroes, (2) Australian aborigines, (3) Polynesians. So far as the results of this research can be briefly explained, they are as follows:

- (1) There is a close relationship of cranial structure between Melanesians of northern and southern New Guinea. Both northern and southern groups have many average measurements so close to the average measurements for corresponding skull traits of African Negroes, that in statistical language "there is no significant difference." Out of thirty-one traits measured there are twelve that show no significant difference in the African Negro and New Guinea Melanesian crania.
- (2) We must acknowledge a strong Australoid influence in some Melanesian crania; for example, when the average values of forty-nine traits are compared for skulls of Australian aboriginals and

Melanesian natives of New Caledonia (New Hebrides group) thirty-five of the traits have no significant difference. An almost equally strong resemblance occurs between Melanesian crania of New Britain and Ambrym (New Hebrides) and those of Australian aboriginals.

- (3) A careful examination of average skull measurements for Melanesians and Polynesians shows little definite resemblance. Measurements on a Museum collection of crania from Polynesia indicate that in certain main characters, notably, larger cranial capacity and greater facial breadth, the Polynesian skulls differ from those of African Negroes, Melanesians, and Australian aborigines.
- (4) Sometimes, as in New Britain, the African Negro and Australoid form of skull, as well as outward appearances of these groups, may exist in close proximity. Examples of these Australian and Negro forms of Melanesians in the flesh are shown in photographs of living subjects taken by Dr. Lewis and published by this Museum (Hambly, 1940, figs. 25, 26, pp. 255, 257).
- (5) Research on crania from Ambrym includes statistical investigation of the sex difference of the skulls. In this work a detailed comparison also has been made of the principal average measurements of groups of Melanesian skulls from several regions. There is a fundamental resemblance among these Melanesian groups with regard to cranial capacities, average measurements, and facial angles. The existence of African Negro and Australoid characters in skulls of Ambrym has been considered in detail. The skulls of Ambrym bear the strongest resemblance to those of Australian aborigines. Twenty-six of forty-one traits (average measurements) show no significant difference. There are also certain traits of the

Ambrym skulls that bear a strong resemblance to those of African Negroes.

- (6) In Malekula, the skulls of both male and female infants are subject to pressure by bandages at six weeks after birth. This gives a rapid slope of the forehead from the top of the nose backward, which is considered a mark of beauty and social distinction. Careful measurements indicate that the development of the skull is not retarded. The capacity becomes that of the undeformed Melanesian skull. Compression changes only a few skull measurements from the normal averages of the Melanesian group.

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Bibliography

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The selected bibliography that appeared in the first printing of this book has been revised and brought up to date, in order to include recent anthropological field studies, as well as a number of general works of comprehensive scope that treat Melanesia as part of the larger Oceanic world. At the same time, some of the earlier accounts have been eliminated as being too superficial or too one-sided in their authors' approach to the subject matter. However, the bibliography is by no means limited to books by professional anthropologists, for it includes accounts by explorers, missionaries, naturalists, administrators, journalists, and travellers, all of whom have contributed their own perspectives in writing of the native peoples of Melanesia.

The literature on Melanesia provides an excellent example of the growth and development of anthropology, particularly of ethnology and social anthropology—branches of anthropology that deal with the cultures of living peoples. In the nineteenth century, anthropologists depended primarily on the accounts of naturalists, travellers, and missionaries for their data. The book by Codrington (1891) is a classic of this type of work. With the advent of the twentieth century, anthropologists began to go into the field to make their own observations, and it was with this development that the anthropological study of contemporary, non-Western peoples began to achieve accepted professional status. The Cambridge University Expedition to the Torres Straits was a landmark in the development of field work. The reports (1904–12) are included in the bibliography. There followed the special studies of Seligmann (1910) and others, culminating in the brilliant work of Malinowski (1915, 1922, 1929, 1935), whose investigations in the Trobriand Islands have been a stimulus to all ethnologists of a younger generation. In more recent years, field studies in Melanesia have exhibited increasing depth and penetration in the analysis of native cultures, a developing competence in descriptive ethnography, and an increasing variety in the types of problems investigated, which have included those pertaining to the nature of change in native cultures and societies under the impact of Western influence. This maturing of anthropological work in Melanesia is consonant with the growth of the profession as a whole. Finally, several broad studies have appeared,

treating Melanesia, its history, and its present social, economic, and political problems as part of the larger Oceanic scene. In this connection, the books by Keesing (1941) and Oliver (1951) should be mentioned.

The following list of books is by no means exhaustive, and with a few exceptions is limited to those in English. Most of the literature on the Dutch, French, and former German possessions is not in English. Also, journal articles are not included. Important articles of general and professional interest on Melanesia have appeared in the *Journal of the Royal Anthropological Institute, Man, Journal of the Royal Geographical Society, Journal of the Polynesian Society, Oceania, American Anthropologist, Geographic Review, the National Geographic, Pacific Affairs, and the Far Eastern Survey.*

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A yearly summary of the condition of the colony, together with many special reports by government officials on native life, new explorations, or other topics of interest relating to the colony. A rich mine of information for those willing to dig.

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HIDES, J. G.

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1927. The Kiwai Papuans of British New Guinea. 485 pp., pl. MacMillan and Co., Ltd., London.

A careful study of the customs, beliefs, and ceremonies of the Papuans near the mouth of the Fly River, obtained during a two years' residence among them.

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A good general account of the country and people, as looked at from the standpoint of an administrator.

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This may be regarded as a continuation of Judge Murray's previous book.

NEWTON, HENRY

1914. In far New Guinea. A stirring record of work and observation amongst the people of New Guinea, with a description of their manners, customs, and religions. 304 pp., map. J. B. Lippincott Co., Philadelphia.

An account of missionary work in eastern Papua.

PRATT, A. E.

1906. Two years among New Guinea cannibals. 539 pp., pls., map. J. B. Lippincott Co., Philadelphia.

A naturalist's experiences in traveling and collecting in southern Papua.

RAWLING, C. G.

1913. The land of the New Guinea pygmy. 366 pp., pl. Seeley, Service, and Co., London.

Another account of the expedition of the British Ornithologists' Union to Dutch New Guinea, officially described by Wollaston.

REED, STEPHEN W.

1943. The making of modern New Guinea. xii+326 pp. American Philosophical Society, Philadelphia.

The recent history of New Guinea, with an appraisal of the effects of culture contact on the formation of contemporary society.

RILEY, E. B.

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SANDE, G. A. J. VAN DER

1907. Nova Guinea. Vol. III. Ethnography and Anthropology. 390 pp., 50 pls., 216 text figs. E. J. Brill, Leiden.

An account of the natives visited by the Dutch expedition of 1903 to the north coast of Dutch New Guinea, with comparative notes on other parts of New Guinea from the literature.

SAVILLE, W. J. V.

1926. In unknown New Guinea. A record of twenty-five years of personal observation and experience amongst the interesting people of an almost unknown part of these vast islands and a description of their manners and customs, occupations in peace and methods of warfare, their secret rites and public ceremonies. 316 pp., pl., map. Seeley, Service and Co., Ltd., London.

A detailed account of the natives of Mailu, southeastern Papua, giving a readable description of native life.

SELIGMANN, C. G.

1910. The Melanesians of British New Guinea. 766 pp., 78 pls., 50 text figs. Cambridge University Press.

The best general account of the tribes of southeastern Papua, but somewhat technical and by no means complete. Useful details and photographs of tattooing.

STIRLING, M.

1943. The native peoples of New Guinea. 25 pp., illus. Smithsonian Institution War Background Studies, No. 9, Washington, D.C.

Brief introductory study written for the non-specialist.

THURNWALD, RICHARD

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This book includes three papers: 1. *The Taro Cult: a Study of a Primitive Religious Movement.* 2. *The Garden Culture of the Orokaiva.* 3. *Orokaiva Magic.*

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This is an excellent general account of one of the tribal groups of northeastern Papua. Very well written, though some of the chapters are of necessity somewhat detailed and technical.

1936. *Papuans of the Trans-Fly.* xxxvi+452 pp., 36 text figs., 19 pls., 4 maps. Clarendon Press, Oxford.

Comprehensive ethnography of the Trans-Fly peoples.

1940. *Drama of Orokololo.* xxiv+464 pp. Clarendon Press, Oxford.

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WILLIAMSON, R. W.

1912. *The Mafulu mountain people of British New Guinea.* 364 pp., illus. MacMillan and Co., London and New York.

WIRZ, P.

- 1922-25. *Die Marind-anim von Holländisch-Süd-Neu-Guinea.* 2 vols., 4 pts., 127 pls., map. L. Friederichsen and Co., Hamburg.

An exhaustive work on the natives living in the neighborhood of Merauke, Dutch New Guinea.

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1912. *Pygmies and Papuans: the stone age today in Dutch New Guinea.* 352 pp., pls., map. Sturgis and Walton Co., New York.

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BAKER, J. R.

1929. *Man and animals in the New Hebrides.* 200 pp., illus. George Routledge and Sons, London.

An interesting account of two expeditions by a zoologist to the New Hebrides in 1922-23 and 1927.

DEACON, A. B.

1934. Malekula, a vanishing people of the New Hebrides. xxxviii+789 pp., illus. Mitchell and Hughes, London.

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GUNN, WILLIAM

1914. The gospel in Futuna, with chapters on the islands of the New Hebrides, the people, their customs, religious beliefs, etc. 308 pp., illus. Hodder and Stoughton, London.

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Technical, anthropometric study.

HARRISSON, T.

1937. Savage civilization. 461 pp. Victor Gollancz, Ltd., London. General and popular account of the New Hebrides.

HUMPHREYS, C. B.

1926. The southern New Hebrides. An ethnological record. 214 pp. Cambridge University Press.

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JACOMB, EDWARD

1914. France and England in the New Hebrides. The Anglo-French condominium. Sydney.

1919. The future of the Kanaka. 222 pp. London.

These books treat of the history of the French and English in the New Hebrides, and the effect on the native population.

LAYARD, J.

1942. The stone men of Malekula, New Hebrides. 816 pp., pl., maps. Chatto and Windus, London.

Ethnographic field study of social organization, ritual, and ceremony of the Vao natives of Malekula.

MARKHAM, A. H.

1873. The cruise of the *Rosario* amongst the New Hebrides and Santa Cruz Islands. 304 pp., pl., map. London.

An account by the captain of the English man-of-war *Rosario* of conditions in the various islands of the New Hebrides and Santa Cruz groups, where he was sent by the government in 1871 to investigate reports of atrocities by the natives, as well as improper acts by labor recruiters.

ROBERTSON, H. A.

1902. Erromanga, the Martyr Isle. 467 pp., illus. Hodder and Stoughton, London.

Gives a brief account of the natives and of the history of their contact with Europeans.

SARASIN, FRITZ

1929. *Ethnologie der Neu-Caledonier und Loyalty-Insulaner*. 2 vols., text (320 pp.) and atlas (73 pls.). C. W. Kreidel's Verlag, Munich.

The only work treating New Caledonia at all fully. Gives full literary references.

SPEISER, FELIX

1913. *Two years with the natives in the western Pacific*. 291 pp., illus. Miles and Boon, London.

A popular account of Dr. Speiser's travels in the New Hebrides.

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1935. *Both sides of the Buka passage. An ethnographic study of social, sexual and economic questions in the northwestern Solomon Islands*. 624 pp., illus., map. Clarendon Press, Oxford.

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1924. *The threshold of the Pacific. An account of the social organization, magic, and religion of the people of San Cristoval in the Solomon Islands*. 379 pp., illus., map. Kegan Paul, London; Alfred Knopf, New York.

GUPPY, H. B.

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HOGBIN, H. I.

1939. *Experiments in civilization. The effects of European culture on a native community of the Solomon Islands*. xvii+268 pp., illus. George Routledge and Sons, Ltd., London.

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HOPKINS, A. I.

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A good introductory account of native life, but too general to show the variation between different regions.

IVENS, W. G.

1927. *Melanesians of the southeast Solomon Islands*. 528 pp., illus. Kegan Paul, London.

This book deals especially with the natives of Ulawa Island and Sa'a on southern Malaita, but many other neighboring peoples are also referred to.

1930. The island builders of the Pacific. 317 pp., illus. Seeley, Service and Co., Ltd., London.

A general ethnography of the inhabitants of the small artificial islands lying off the coast of Malaita, Solomon Islands.

KNIBBS, S. G. C.

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Readable but superficial account.

MENDANA, A. DE

1901. The discovery of the Solomon Islands by Alvaro de Mendaña in 1568. Translated from the original Spanish manuscripts. Edited, with introduction and notes, by Lord Amherst of Hackney and Basil Thomson. Hakluyt Soc. 2 vols. London.

OLIVER, DOUGLAS L.

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WHEELER, G. C.

1926. Mono-Alu folklore, Bougainville Straits, western Solomon Islands. xv+396 pp. George Routledge and Sons, Ltd., London.

WOODFORD, C. M.

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